

Catalogue

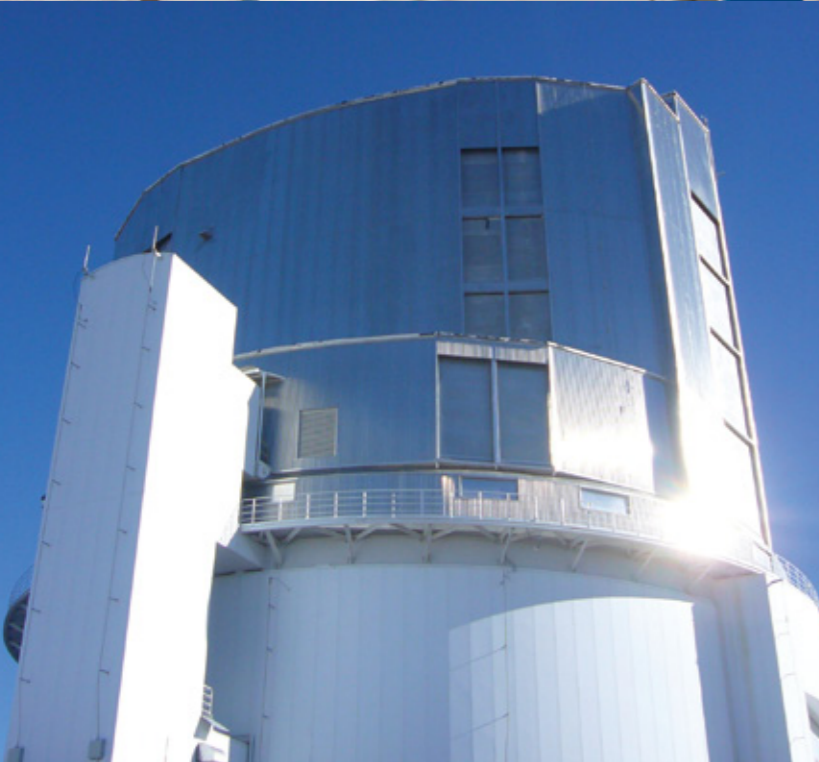
Precision Balance



JQA-2834
TSUKUBA



ISO 14001:2004
ER-00130



Sophisticated Weighing Solution for Lab Professionals

SHINKO DENSHI is one of the leading suppliers of laboratory/precision balances in the world. We provide high-quality electronic balances to wide range of business field, laboratory, pharmaceuticals, manufacturing industry, jewelers, etc...

Every kind of business market is getting more and more diversified vertically and horizontally. Furthermore time and cost efficiency are highly requested there. In this complicated business structure nothing is possible without accurate and precise measurement. It is key factor for every lab and industry professional who aims to achieve excellent performance.

As leading supplier of laboratory/precision balances our mission is to provide the accurate and precise weighing solution in sophisticated way for every professionals in all business field. For this mission we continuously devote ourselves to the development of innovative and original products in collaboration with business partners all over the world.

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"Repeatability" in each specifications table in pp.6-35 is described as standard deviation.
"Linearity" and "Stabilization time" in each specifications table in pp.6-35 are described as typical values.

Application Index

Laboratory

LF Series LN Series HT Series AJ Series

Pharmacy

AJ Series SJ Series

Jewelry

LN Series AJ Series CT Series

Density Measurement

LF Series LN Series HT Series AJ Series CJ Series DME Series

Water proof

CJ Series HJK Series FJ Series

Chemical

LN Series CJ Series GZ Series HJK Series FJ Series

Industry

LN Series AJ Series CJ Series SJ Series GZ Series HJK Series FJ Series

Parts counting

LN Series AJ Series CUXII Series HJK Series

Hazardous area

GZ Series

Built-in weighing unit

UF Series DFB Series

Laboratory

Chemical

Pharmacy

Industry

Jewelry

Parts counting

Density Measurement

Hazardous area

Water proof

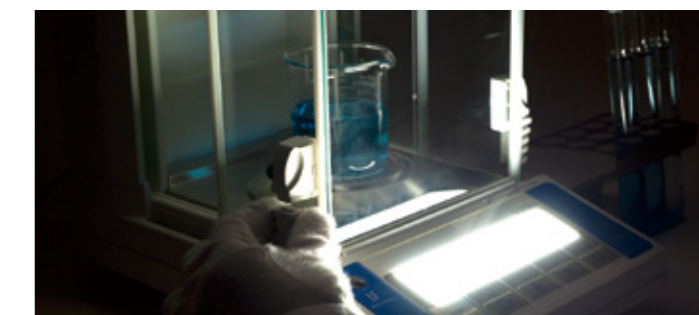
Built-in weighing unit

LF series

High Class Semi-micro and Analytical Balance

For Lab Professionals who Create the Distinguished Achievement

VIBRA LF series provides all lab professionals need for dairy weighing works. With 0.01mg readability up to 92g weighing range and 0.1mg up to 220g, the user can experience reliable measurement operation in wide range of weighing applications ... simple weight measurement, percentage weighing, density measurement, etc... In every scene, VIBRA LF series promises excellent weighing performance which leads lab professionals to distinguished achievements.



Specifications

Semi-micro balance	LF 225DRCE		LF 225DR	
Model name	LF 225DRCE		LF 225DR	
Capacity	92g	220g	92g	220g
Readability (d)	0.01mg	0.1mg	0.01mg	0.1mg
Verification intervals (e)	1mg	1mg	-	-
Repeatability	0.02mg	0.1mg	0.02mg	0.1mg
Linearity	±0.03mg	±0.2mg	±0.03mg	±0.2mg
Stabilization time	5.0 sec.	3.0 sec.	5.0 sec.	3.0 sec.
Pan size	80mm dia		80mm dia	
Calibration	Internal & External		Internal & External	

Analytical balance	LF 124RCE	LF 224RCE	LF 124R	LF 224R
Model name	LF 124RCE	LF 224RCE	LF 124R	LF 224R
Capacity	120g	220g	120g	220g
Readability (d)	0.1mg	0.1mg	0.1mg	0.1mg
Verification intervals (e)	1mg	1mg	-	-
Repeatability	0.1mg	0.1mg	0.1mg	0.1mg
Linearity	±0.2mg	±0.2mg	±0.2mg	±0.2mg
Stabilization time	3.0 sec.	3.0 sec.	3.0 sec.	3.0 sec.
Pan size	80mm dia	80mm dia	80mm dia	80mm dia
Calibration	Internal & External	Internal & External	External	External

*"CE" models are OIML class I approved.

Common Specification

Power source	: AC 110/240V DC 5.9V
Output	: RS232C (D-sub 9p)
Measuring system	: Electro-magnetic force compensation sensor
Tare	: Full weighing range
Display	: Back-lit LCD (brightness adjustable in three levels)
EC type approval	: available for all models (Class 1)

*For options, please see page 37.





Cross-Over sliding windshield

VIBRA LF series is equipped with "cross-over sliding" windshield which enables the user to open the right-side door by left-side knob, vice versa. The user can handle the weighing sample with right hand while he/she operates the door with left hand. It makes weighing operation in lab routines less time-consuming.

The regular calibration is highly important to assure the reliable weighing result. "Se-CAL" function in VIBRA LF series performs automatic calibration. When elapsed time or temperature shift reach to defined value, "Se-CAL" carries out the calibration fully automatically. The calibration record can be stored in the balance and output later on.



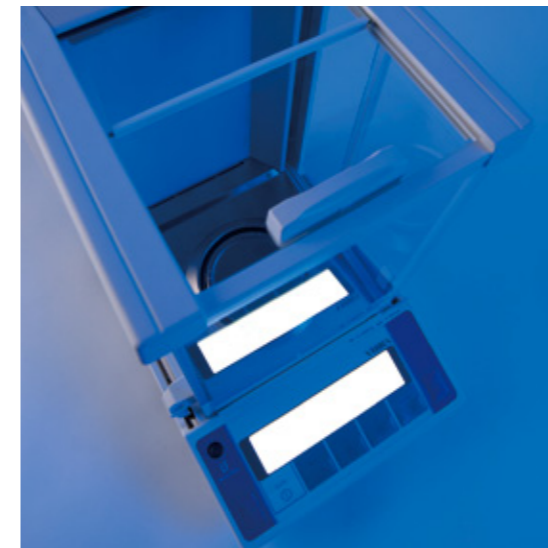
Se-CAL



α-Check

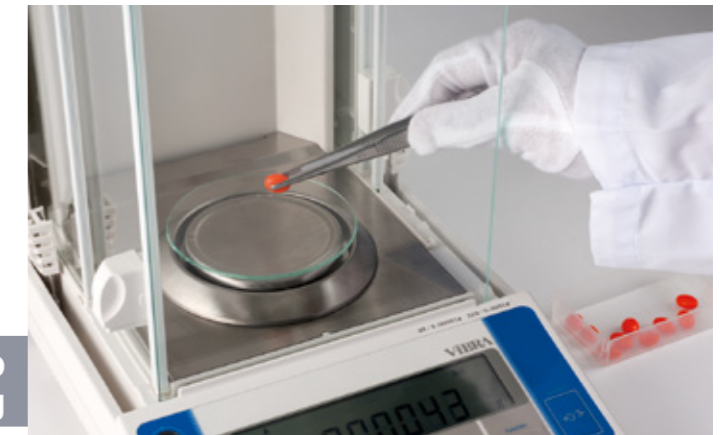
The laboratory/factory environment is changing every moment, and it affects the conditions of balance.

In α-check system, VIBRA LF series gives diagnosis menu of its own conditions. Among check-items repeatability is the most fundamental parameter in laboratory balance, and the user can easily check it in this system.



Bright LCD back light

With clear and bright back-lit LCD, the user can easily read the indication in the display. It reduces the reading errors. The brightness of back-lit can be adjusted in three levels.

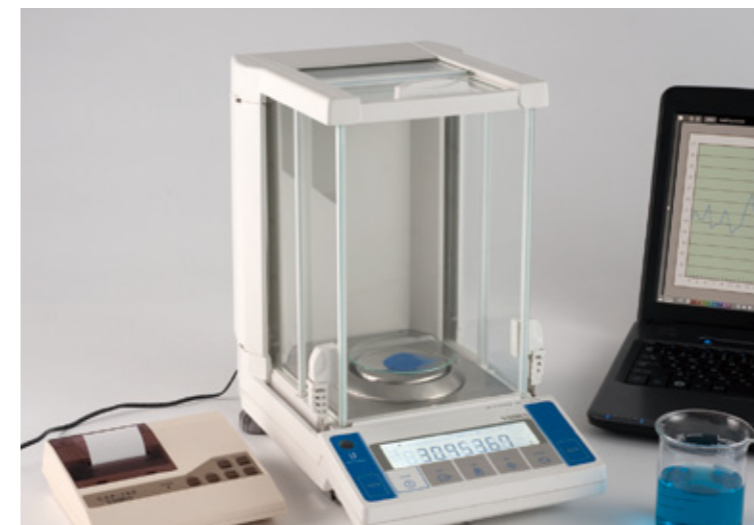


Statistics for lab and manufacturing

Not only individual weighing result but also statistic values are frequently required in lab and manufacturing process. VIBRA LF series provides both of them. It has the function to automatically calculate the various statistical data, and to easily output to printer and PC.

Easy RES

Stability and response speed should be correctly chosen according to environment and weighing objects. "Easy RES" offers the balance users very easy and simple way to change response speed. He/she can change response speed in three levels just with out-touch of SET key.



Connection to outside devices

VIBRA LF series has RS232C output as standard and can be easily connected to the printer, PC and other outside devices. You can record the weighing results in printed and/or electric forms.

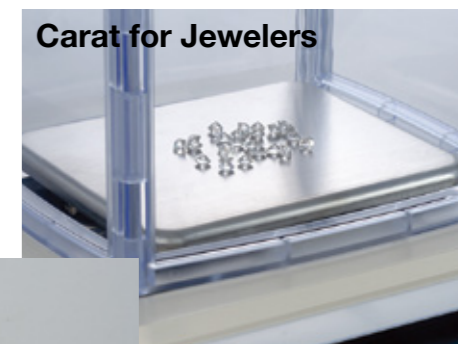
LN series

High Class Precision Balance Sophisticated Balance, the Professional's Choice

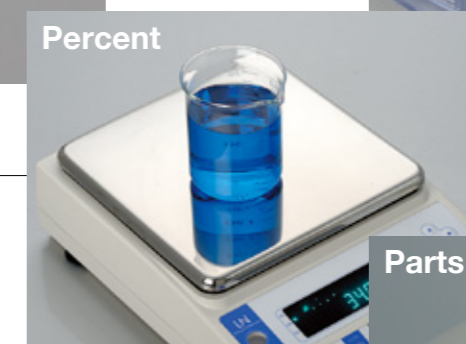
VIBRA LN series always offers you the complete weighing solution. The capacity ranges from 220g to 31kg, the readability from 1mg to 0.1g.

The advantage like short stabilization time, clear fluorescent display, tough housing, stylish design... VIBRA LN series can be suitable for every occasions from laboratory, light&heavy industry, and jewelers.

Carat for Jewelers



Percent



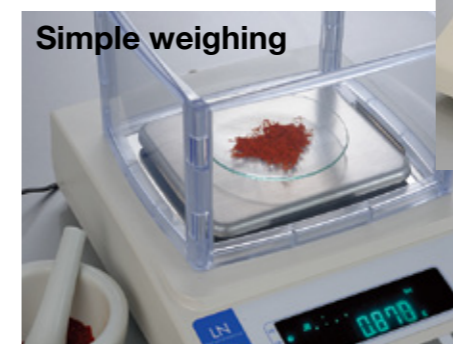
Parts Counting



Comparator



Simple weighing



Density



Specifications

Model name	LN 223R LN 223RCE	LN 323R LN 323RCE	LN 423R LN 423RCE	LN 623R LN 623RCE	LN 1202R LN 1202RCE	LN 2202R LN 2202RCE	LN 3202R LN 3202RCE	LN 4202R LN 4202RCE
Capacity	220g	320g	420g	620g	1200g	2200g	3200g	4200g
Readability (d)	0.001g	0.001g	0.001g	0.001g	0.01g	0.01g	0.01g	0.01g
Verification intervals (e) *1	0.01g	0.01g	0.01g	0.01g	0.1g	0.1g	0.1g	0.1g
Repeatability	0.001g	0.001g	0.001g	0.001g	0.01g	0.01g	0.01g	0.01g
Linearity	±0.001g	±0.001g	±0.001g	±0.001g	±0.01g	±0.01g	±0.01g	±0.01g
Stabilization time	2.5 sec.	2.5 sec.	2.0 sec.	2.0 sec.	2.0 sec.	2.5 sec.	2.5 sec.	2.5 sec.
Pan size	120×140mm	120×140mm	120×140mm	120×140mm	200×200mm	200×200mm	200×200mm	200×200mm
Calibration	Internal & External	Internal & External	Internal & External	Internal & External	Internal & External	Internal & External	Internal & External	Internal & External

Model name	LN 223 LN 223CE	LN 323 LN 323CE	LN 423 LN 423CE	LN 623 LN 623CE	LN 1202 LN 1202CE	LN 2202 LN 2202CE	LN 3202 LN 3202CE	LN 4202 LN 4202CE	LN 6202 LN 6202CE	LN 8201 LN 8201CE	LN 12001 LN 12001CE	LN 15001 LN 15001CE	LN 21001 LN 21001CE	LN 31001 LN 31001CE
Capacity	220g	320g	420g	620g	1200g	2200g	3200g	4200g	6200g	8200g	12000g	15000g	21000g	31000g
Readability (d)	0.001g	0.001g	0.001g	0.001g	0.01g	0.01g	0.01g	0.01g	0.01g	0.1g	0.1g	0.1g	0.1g	0.1g
Verification intervals (e) *1	0.01g	0.01g	0.01g	0.01g	0.1g	0.1g	0.1g	0.1g	0.1g	1g	1g	1g	1g	1g
Repeatability	0.001g	0.001g	0.001g	0.001g	0.01g	0.01g	0.01g	0.01g	0.01g	0.1g	0.1g	0.1g	0.1g	0.1g
Linearity	±0.001g	±0.001g	±0.001g	±0.001g	±0.01g	±0.01g	±0.01g	±0.01g	±0.01g	±0.1g	±0.1g	±0.1g	±0.1g	±0.1g
Stabilization time	2.5 sec.	2.5 sec.	2.0 sec.	2.0 sec.	2.0 sec.	2.5 sec.	2.5 sec.	2.5 sec.	3.0 sec.	2.5 sec.	2.5 sec.	2.5 sec.	2.5 sec.	2.5 sec.
Pan size	120×140mm	120×140mm	120×140mm	120×140mm	200×200mm	200×200mm	200×200mm	200×200mm	200×200mm	200×200mm	200×200mm	200×200mm	220×250mm	220×250mm
Calibration	External	External	External	External	External	External	External	External	External	External	External	External	External	External

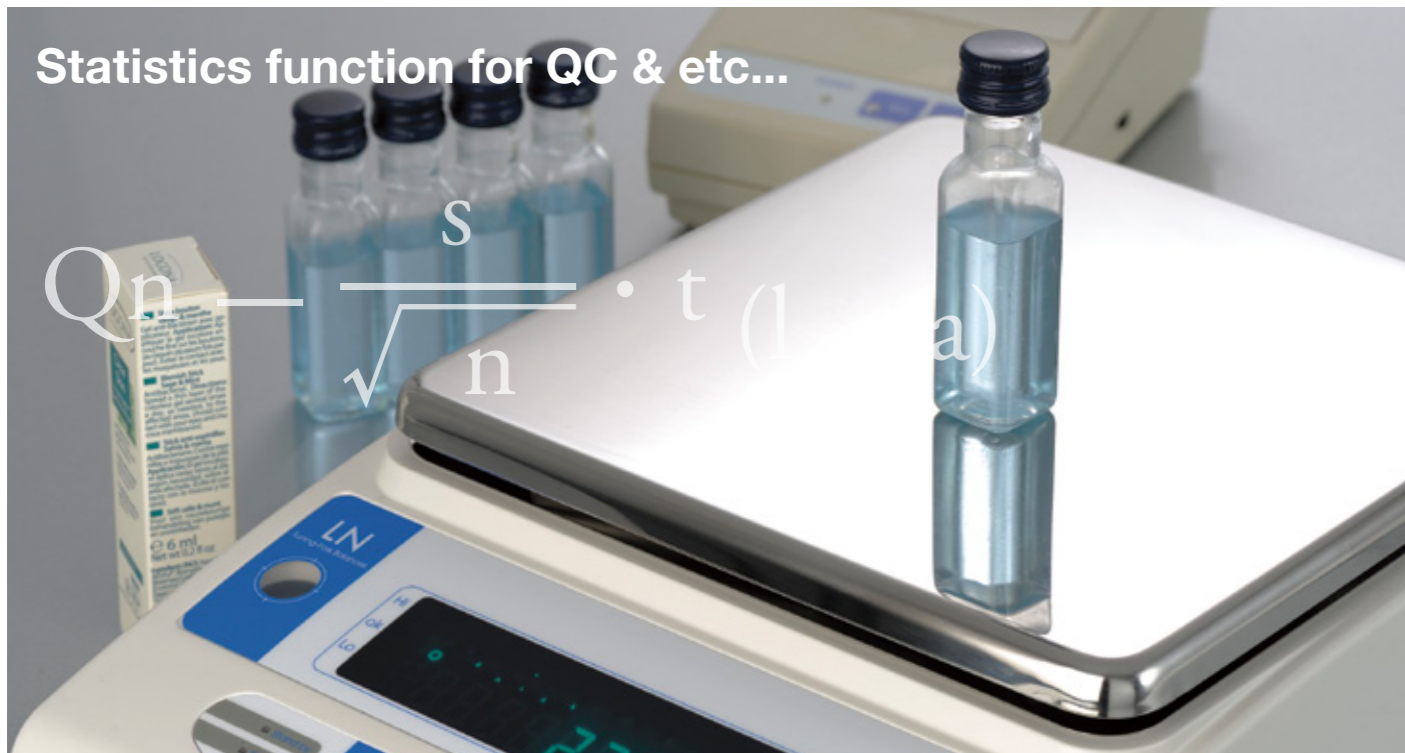
*1 "CE" models are OIML class I and II approved. Verification interval "e" is available only in "CE" models.

Common Specification

Power source : AC120/230V, DC12V
 Output : RS232C (2 outputs)
 Measuring system : Tuning-fork frequency system
 Tare : Full weighing range
 Display : Fluorescent display

*For options, please see page 37.

Statistics function for QC & etc...



ViBRA LN series has the function to automatically calculate the various statistical data from the measurement results. This data can be useful for the quality control in the assembling line and the statistical checks of prepackaged products. The data can be output to the printer and PC.



Fluorescent display, clearly visible

The large fluorescent display is clearly visible. It can make it easy to operate the balance even in the dark location.

Short stabilization and stable indication

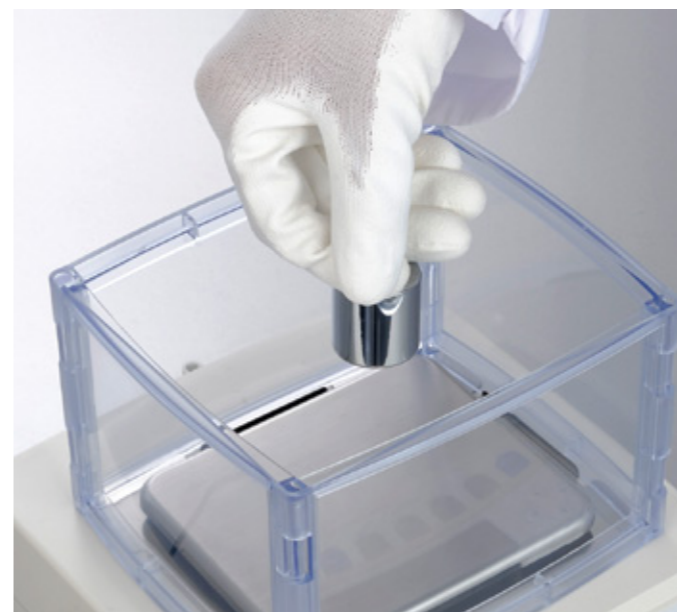
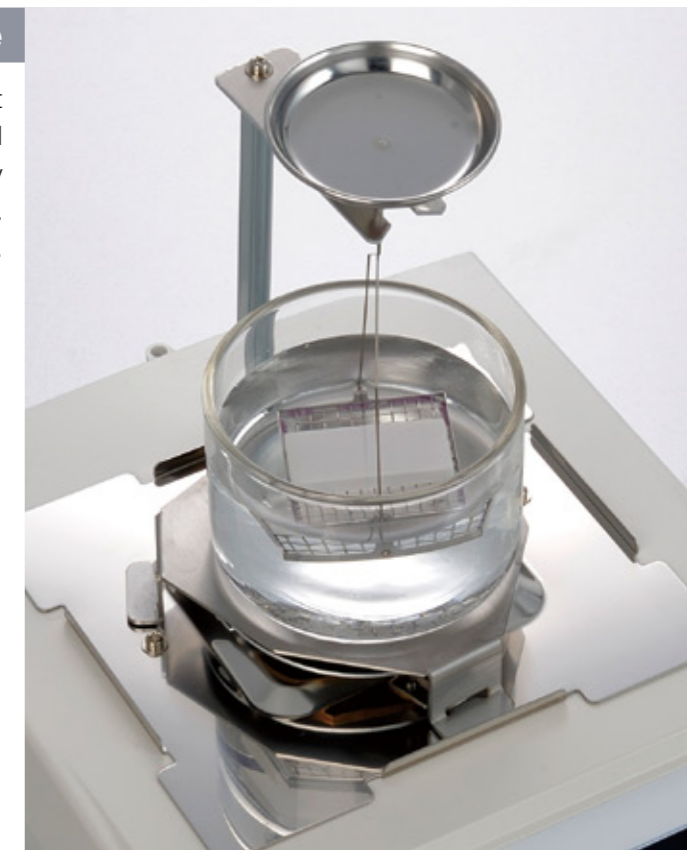
The short stabilization time and the stable indication are important for almost all the weighing operations. ViBRA LN series promises you the quickness and stableness so that it can make the measurement works much more efficient and less time-consuming.



Density measurement mode

To measure the density of the object is one of the most typical applications for the precision balance. ViBRA LN series offers you the function to easily calculate the density from the measurement results.

* the density measurement kit in the image is option.



Accurate measurement by appropriate calibration

It is highly important to keep the accuracy of the balance by calibration. The procedure of the calibration is sometimes bothering, but in ViBRA LN series, you can adjust the balance with one-touch of CAL key (internal weight model only).



Connection to the outside devices

ViBRA LN series has RS232C as standard (two outputs) and can be easily connected to the printer, PC. You can keep the weighing results in the printed and/or electric forms.

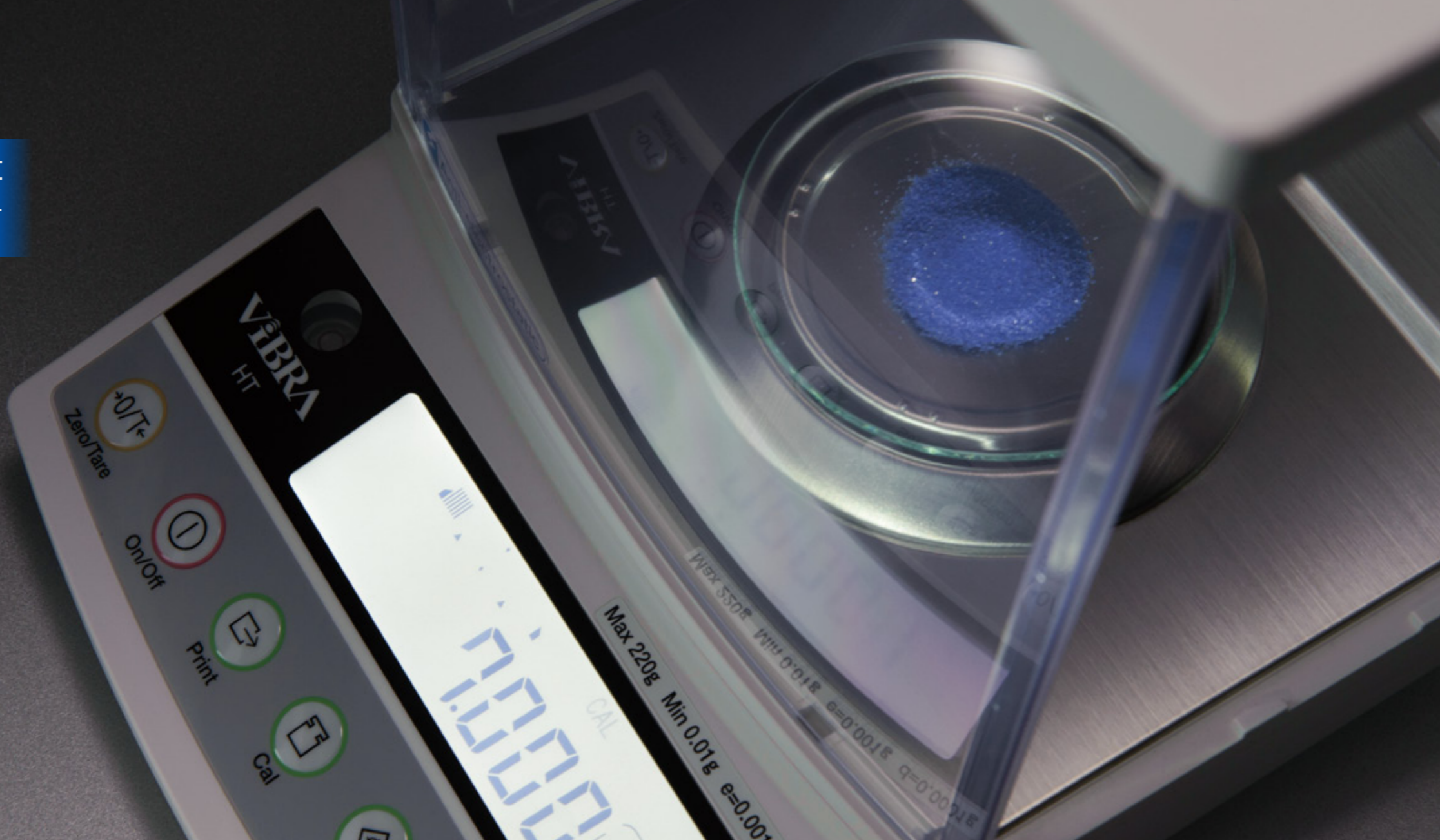


HT series

Standard Analytical Balance

All basic features as analytical balance in compact body

VIBRA HT series has achieved reliable analytical balance with all of tuning-fork sensor advantages. "Plug & Perform" (no warm-up time), energy saver, stable indication, long-term reliability, etc... all are put in this compact . HT series provides you with comfortable and reliable weighing operation in everyday laboratory works.



Specifications

Model name	HTR-80E	HTR-120E	HTR-220E	HTR-80CE	HTR-120CE	HTR-220CE
Capacity	80g	120g	220g	80g	120g	220g
Readability (d)	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg
Verification intervals (e)	-	-	-	1mg	1mg	1mg
Repeatability	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg
Linearity	±0.3mg	±0.3mg	±0.3mg	±0.3mg	±0.3mg	±0.3mg
Stabilization time	3.0 sec.	3.0 sec.	3.0 sec.	3.0 sec.	3.0 sec.	3.0 sec.
Pan size	80mm dia	80mm dia	80mm dia	80mm dia	80mm dia	80mm dia
Calibration	Internal & External	Internal & External	Internal & External	Internal & External	Internal & External	Internal & External

Model name	HT-80CE	HT-120CE	HT-220CE	HT-80CE	HT-120CE	HT-220CE
Capacity	80g	120g	220g	80g	120g	220g
Readability (d)	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg
Verification intervals (e)	-	-	-	1mg	1mg	1mg
Repeatability	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg
Linearity	±0.3mg	±0.3mg	±0.3mg	±0.3mg	±0.3mg	±0.3mg
Stabilization time	3.0 sec.	3.0 sec.	3.0 sec.	3.0 sec.	3.0 sec.	3.0 sec.
Pan size	80mm dia	80mm dia	80mm dia	80mm dia	80mm dia	80mm dia
Calibration	External	External	External	External	External	External

"CE" models are OIML class I approved.

Common Specification

Power source : AC120/230V in DC 9V
 Output : RS-232C & peripheral device output
 Measuring system : Tuning-fork frequency sensing
 Tare : Full weighing range
 Display : LCD with backlit
 EC type approval : available for "CE" models (Class I)

*For options, please see page 37.





Se-CAL

VIBRA HT series is Se-CAL function as standard. In Se-CAL, the balance can perform self-calibration fully automatically according to pre-installed conditions (elapsed time or temperature change). It makes sure that the balance is always in appropriate condition for accurate weighing operation.

Easy RES function

It is sometimes necessary to choose appropriate response speed according to weighing object and outer environment. Easy RES offers very simple function to adjust the response speed. Just one-touch of SET key is enough to adjust response speed in three levels.



Short stabilization time & stable indication

Short stabilization time and stable indication are quite important for efficient laboratory works. VIBRA HT series achieves these two in high level with newly developed tuning-fork sensor.



Simple structure – Easy to clean

It is often happens that weighing objects like powder and liquid are spilled over in this windshield during weighing operation. The simple structure of windshield parts makes it possible to easily disassemble and reassemble for cleaning.

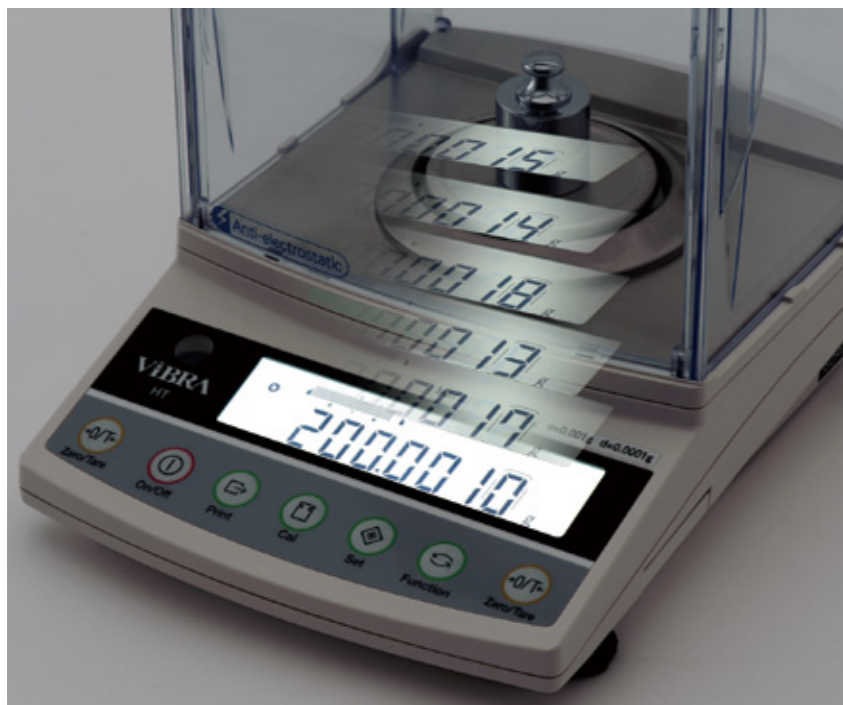
Connection

VIBRA HT series has RS232C output as standard and can be easily connected to the printer, PC and other outside devices. You can record the weighing results in printed and/or electric forms.



Automatic Repeatability Measurement

In ARM function, you can easily check the condition of the balance by calculating the standard deviation of repeatability (HTR series only).



Bright LCD

With clear and bright back-lit LCD, the user can easily read the indication in the display. It reduces the reading errors. The brightness of back-lit can be adjusted in three levels.





AJ series

Standard Precision Balance

SIMPLE IS THE BEST.

This is the basic concept of VIBRA AJ series. Simple, but profound scope for wide measurement fields. Laboratory, factory, jewelry shops, etc... VIBRA AJ series is always the simplest & the best solution for your needs.

VIBRA AJ series provides four weighing modes, simple weight measurement, parts counting, percentage weighing and carat measurement for jewelers. You can easily switch the weighing mode by pushing function key.

Counting



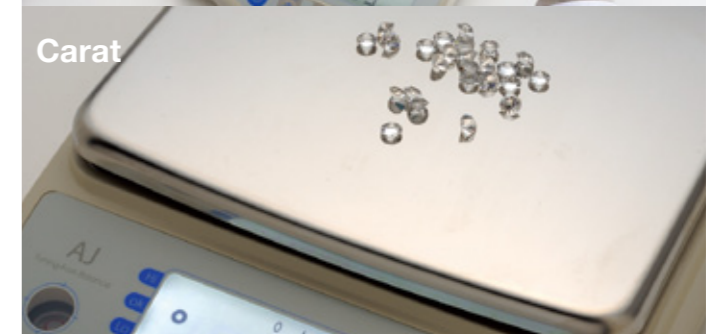
Percent



Weight



Carat



Specifications

Model	AJH-220E AJH-220CE	AJH-320E AJH-320CE	AJH-420E AJH-420CE	AJH-620E AJH-620CE	AJH-2200E AJH-2200CE	AJH-3200E AJH-3200CE	AJH-4200E AJH-4200CE
Capacity	220g	320g	420g	620g	2200g	3200g	4200g
Readability (d)	0.001g	0.001g	0.001g	0.001g	0.01g	0.01g	0.01g
Verification intervals (e) *1	0.01g	0.01g	0.01g	0.01g	0.1g	0.1g	0.1g
Repeatability	0.001g	0.001g	0.001g	0.001g	0.01g	0.01g	0.01g
Linearity	±0.001g	±0.001g	±0.001g	±0.002g	±0.01g	±0.01g	±0.01g
Stabilization time	2.5 sec.	2.5 sec.	2.0 sec.	2.0 sec.	2.0 sec.	2.5 sec.	2.5 sec.
Pan size	118mm dia	118mm dia	118mm dia	118mm dia	180×160mm	180×160mm	180×160mm
Calibration	Internal & External	Internal & External	Internal & External	Internal & External	Internal & External	Internal & External	Internal & External

Model	AJ-220E AJ-220CE	AJ-320E AJ-320CE	AJ-420E AJ-420CE	AJ-620E AJ-620CE	AJ-820E AJ-820CE	AJ-1200E AJ-1200CE	AJ-2200E AJ-2200CE	AJ-3200E AJ-3200CE	AJ-4200E AJ-4200CE	AJ-6200E AJ-6200CE	AJ-8200E AJ-8200CE	AJ-12KE AJ-12KCE
Capacity	220g	320g	420g	620g	820g	1200g	2200g	3200g	4200g	6200g	8200g	12000g
Readability (d)	0.001g	0.001g	0.001g	0.001g	0.01g	0.01g	0.01g	0.01g	0.01g	0.01g	0.1g	0.1g
Verification intervals (e) *1	0.01g	0.01g	0.01g	0.01g	0.01g	0.1g	0.1g	0.1g	0.1g	0.1g	1g	1g
Repeatability	0.001g	0.001g	0.001g	0.001g	0.01g	0.01g	0.01g	0.01g	0.01g	0.01g	0.1g	0.1g
Linearity	±0.001g	±0.001g	±0.001g	±0.002g	±0.01g	±0.01g	±0.01g	±0.01g	±0.01g	±0.02g	±0.1g	±0.1g
Stabilization time	2.5 sec.	2.5 sec.	2.0 sec.	2.0 sec.	2.0 sec.	2.0 sec.	2.5 sec.	2.5 sec.	2.5 sec.	3.0 sec.	2.5 sec.	2.5 sec.
Pan size	118mm dia	118mm dia	118mm dia	118mm dia	170×142mm	170×142mm	180×160mm	180×160mm	180×160mm	180×160mm	180×160mm	180×160mm
Calibration	External	External	External	External	External	External	External	External	External	External	External	External

*1 "CE" models are OIML class I and II approved. Verification interval "e" is available only in "CE" models.

Option

Power source	: AC120/230V in DC 9V
Output	: RS232C(standard)
Measuring system	: Tuning-fork frequency sensing
Tare	: Full weighing range
Display	: LCD with back-light (height 16.5mm)

*For options, please see page 37.





Bright, White Back-light

Large LCD (16.5mm height) with bright & white back-light makes the weighing operation easy and comfortable even in the dark location.

Short Stabilization & Stable Indication

Short stabilization time and stable indication are important feature in the precise weight measurement. The innovative tuning-fork sensor in VIBRA AJ series meets this demand and satisfies you.



Keep the Weighing Accuracy

The model with name AJ"H" has semi-automatic built-in calibration weight. You can easily calibrate the balance with built-in weight. It ensures the accurate and precise weighing operation.



Draft Windshield as Standard

The draft windshield is available as standard for 220g-620g capacity models. It realizes the ideal environment for precise weighing. It can be easily assembled by hands.

Compact Housing, High Portability

The compact housing is one of the advantages of VIBRA AJ series. The space-saving design enables you to install it even in small space. Furthermore you can bring it everywhere you want with optional rechargeable battery.



Connection with Outside Devices

RS232C interface is installed as standard feature in every models of VIBRA AJ series. You can connect the balance to outside devices like PC.

Density Measurement Kit Option

The density measurement kit can be available as option.
*No program to automatically calculate the density is installed in VIBRA AJ series. Just the kit as option.





Chemical

Industry

CJ series

High Class Precision Balance Heavy duty, High performance, Reliable measurement

As heavy-duty high-precision balance with water & dust proof feature, CJ series promises the excellent performance in any environment, dust atmosphere, mist, oil splashes, dark condition... etc. The stainless-steel upper case is resistant to chemical products, and easy to clean.

CJ series provides multi-function & multi-mode measurement and covers the wide weighing range from 220g to 15kg with minimum readability 0.01g. This is the best solution to your every needs.

Specifications

Model	CJ-220E CJ-220CE	CJ-320E CJ-320CE	CJ-620E CJ-620CE	CJ-820E CJ-820CE	CJ-2200E CJ-2200CE	CJ-4200E CJ-4200CE	CJ-6200E CJ-6200CE	CJ-8200E CJ-8200CE	CJ-15KE CJ-15KCE
Capacity	220g	320g	620g	820g	2200g	4200g	6200g	8200g	15000g
Readability (d)	0.01g	0.01g	0.01g	0.01g	0.1g	0.1g	0.1g	0.1g	1g
Verification intervals (e)*1	0.01g	0.01g	0.01g	0.01g	0.1g	0.1g	0.1g	0.1g	1g
Repeatability	0.01g	0.01g	0.01g	0.01g	0.1g	0.1g	0.1g	0.1g	1g
Linearity	±0.01g	±0.01g	±0.01g	±0.01g	±0.1g	±0.1g	±0.1g	±0.1g	±1g
Pan size	140mm dia.	140mm dia.	140mm dia.	140mm dia.	190×190mm	190×190mm	190×190mm	190×190mm	190×190mm
Calibration	External	External	External	External	External	External	External	External	External

*1 "CE" models are OIML class II approved. Verification interval "e" is available only in "CE" models.

*For options, please see page 37.

Stainless steel highly resistant to tough conditions

Mirror finished stainless steel housing easy to clean, durable to tough conditions.



Minimize stabilization time and keep the indication stable

Unique tuning-fork sensing system achieves short stabilization time and stable indication necessary for reliable measurement. The short stabilization ensures the comfortable and efficient operation.



Density Measurement

The density can be measured in "density measurement mode" with under-weighing hook (hook is option).



Various measurement modes & functions for industrial weighing

Parts counting, percentage, comparator, density measurement... CJ is the answer to various requirements in the industrial weighing. You can easily set the appropriate mode with arrow key.

Low energy-consuming, high portability

Low energy-consuming design allows CJ series to operate for 200 hours with dry-cell battery (when back-lit is OFF). It is very much suitable for mobile use (32-hour operation with dry-cell battery in case of back-lit ON).



Chemical

Industry

Density Measurement

Water proof

SJ series

Pharmacy
Industry
Jewelry



CT series



Jewelry

Basic Precision Balance

Indispensable functions with reasonable budget

Highly usable basic applications

SJ series offers basic applications in user-friendly operations to make weighing work easier : percentage weighing, counting, comparator, etc...

Short stabilization & stable indication

SJ series offers short stabilization time and stable indication. It promises stress-free weighing routine works.

Portability

SJ series can be operated with rechargeable battery option. And all features are well combined in quite compact body. It realizes high-portability of precision balance.



Specifications

Model	SJ-220E SJ-220CE	SJ-420E SJ-420CE	SJ-620E SJ-620CE	SJ-1200E SJ-1200CE	SJ-2200E SJ-2200CE	SJ-4200E SJ-4200CE	SJ-6200E SJ-6200CE	SJ-12KE SJ-12KCE
Capacity	220g	420g	620g	1200g	2200g	4200g	6200g	12000g
Readability (d)	0.01g	0.01g	0.01g	0.1g	0.1g	0.1g	0.1g	1g
Verification intervals (e)*1	0.01g	0.01g	0.1g	0.1g	0.1g	0.1g	1g	1g
Repeatability	0.01g	0.01g	0.01g	0.1g	0.1g	0.1g	0.1g	1g
Linearity	±0.01g	±0.01g	±0.01g	±0.1g	±0.1g	±0.1g	±0.1g	±1g
Pan size	140mm dia.	140mm dia.	140mm dia.	170×142mm	180×160mm	180×160mm	180×160mm	180×160mm
Calibration	External	External	External	External	External	External	External	External

*1 "CE" models are OIML class II approved. Verification interval "e" is available only in "CE" models.

*For options, please see page 37.

Roll-top type



Three-sliding type



Carat Balance

Light and compact balance for jewelers

Compact housing

CT series is equipped with unique "Roll-top" windshield. It enables user to access the balance from front and reduces the volume of balance housing. Standard three-sliding windshield model is also available.

Readability from 0.001ct to 0.01ct

0.001ct readability with capacity 600ct is very much fitted to weighing of diamond. It is typically used in diamond jewelry shops and diamond manufacturers.

Specifications

"Roll-top" windshield type

Model	CT-600E CT-600CE	CT-1600E CT-1600CE
Capacity	600ct	1600ct
Readability (d)	0.001ct	0.01ct
Verification intervals (e)*1	0.01ct	0.1ct
Repeatability	0.001ct	0.01ct
Linearity	±0.003ct	±0.01ct
Stabilization time	4.0 sec.	4.0 sec.
Pan size	80mm dia.	80mm dia.
Calibration	External	External

Three-sliding windshield type

Model	CT-600TE CT-600TCE	CT-1600TE CT-1600TCE
Capacity	600ct	1600ct
Readability (d)	0.001ct	0.01ct
Verification intervals (e)*1	0.01ct	0.1ct
Repeatability	0.001ct	0.01ct
Linearity	±0.003ct	±0.01ct
Stabilization time	4.0 sec.	4.0 sec.
Pan size	80mm dia.	80mm dia.
Calibration	External	External

*1 "CE" models are OIML class I approved. Verification interval "e" is available only in "CE" models.

*For options, please see page 37.



CUXII series



DME series

Parts
counting

Precision Counting Balance

Advanced counting system with high reliability

Automatic re-sampling

Count only 5 pieces and load them, then just follow the instructions on the display. The balance automatically adjusts the variation in unit weight, then leads you to reliable results.

Three individual displays

CUXII series has three individual displays which show quantity, unit weight and total weight simultaneously.

300 items memory

CUXII series offers 300 items memory which store unit weight and tare weight with its ID number.



Specifications

Model	CUXII-600D	CUXII-1500D	CUXII-3000D	CUXII-6000D	CUXII-12KD
Capacity	600g	1500g	3000g	6000g	12000g
Readability	0.01g	0.05g	0.05g	0.1g	1g
Countable unit in weight	0.001g	0.0025g	0.005g	0.01g	0.02g
Pan size	140mm dia.	234x204mm	234x204mm	234x204mm	234x204mm
Calibration	External	External	External	External	External

*For options, please see page 37.

Density
Measurement

Density Measurement Balance

Density measurement & simple weight measurement - Two in one

Measure the density

DME series is the balance specialized in density measurement. The value of the relative density and the volume can be easily measured. It is convenient for quality control in manufacturing line like rubber, plastic, etc...

Two use in one unit

DEM series can be available as standard precision balance when water tank is replaced with standard weighing pan. The weighing pan is included as standard.



Specifications

Model	DME-220E	DME-220HE
Capacity in density	220g	220g
Capacity in weight measurement	600g	600g
Readability (d)	0.01g	0.01g
Repeatability	0.01g	0.01g
Linearity	±0.01g	±0.01g
Pan size	140mm dia.	140mm dia.
Calibration	External	Internal & External

*For options, please see page 37.

GZII series

GZH series

GZ series



Chemical

Industry

Hazardous area

Precision Ex-proof scale

ATEX approved scale for precision weighing in dangerous areas

In industrial scene the accurate weighing operation is often necessary even in explosive atmosphere. GZ series can perform reliable weighing operation in explosive atmosphere zone 1 and zone 2. All models can be supplied as "dry-cell battery operation type" for which no complicated installation works are necessary.

Specifications

Model	GZH-610Ex	GZH-1500Ex	GZH-3100Ex	GZH-6100Ex	GZH-30KEx	GZII-2000Ex	GZII-6000Ex	GZII-12KEx	GZII-30KEx	GZII-60KEx
Capacity	610g	1500g	3100g	6100g	30000g	2000g	6000g	12000g	30000g	60000g
Readability (d)	0.01g	0.01g	0.01g	0.1g	0.1g	0.01g	0.1g	0.1g	1g	1g
Repeatability	0.01g	0.01g	0.01g	0.1g	0.2g	0.01g	0.1g	0.2g	1g	1g
Pan size	140mm dia.	250×202mm	250×202mm	250×202mm	270×250mm	170mm dia.	250×202mm	250×202mm	360×326mm	360×326mm
Calibration	Internal & External	Internal & External	Internal & External	Internal & External	Internal & External	External	External	External	External	External

Model	GZH-610CEX	GZH-1500CEX	GZH-3100CEX	GZH-6100CEX	GZH-30KCEX	GZII-2000CEX	GZII-6000CEX	GZII-12KCEX	GZII-30KCEX	GZII-60KCEX
Capacity	610g	1500g	3100g	6100g	30000g	2000g	6000g	12000g	30000g	60000g
Readability (d)	0.01g	0.01g	0.01g	0.1g	0.1g	0.01g	0.1g	0.1g	5g	1g
Verification intervals (e)*1	0.1g	0.1g	0.1g	1g	1g	0.1g	1g	1g	5g	10g
Repeatability	0.01g	0.01g	0.01g	0.1g	0.2g	0.01g	0.1g	0.2g	5g	1g
Pan size	140mm dia.	250×202mm	250×202mm	250×202mm	270×250mm	170mm dia.	250×202mm	250×202mm	360×326mm	360×326mm
Calibration	Internal & External	Internal & External	Internal & External	Internal & External	Internal & External	External	External	External	External	External

*1 "CE" models are OIML class II approved.

* All models can be ordered as dry-cell battery type. The model name of dry-cell type contains alphabet "B" like "GZ△-B×××Ex".

*For options, please see page 37.



Selectable from two types in power supply, power supply box type or dry-cell battery type

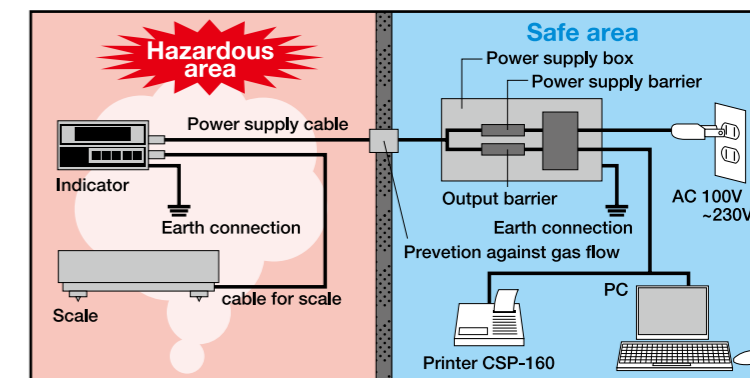
Power supply box type

no earth connection work is necessary

Dry-cell battery type, very easy to install

no wiring work is necessary, 150 hours continuous operation

Establishment example

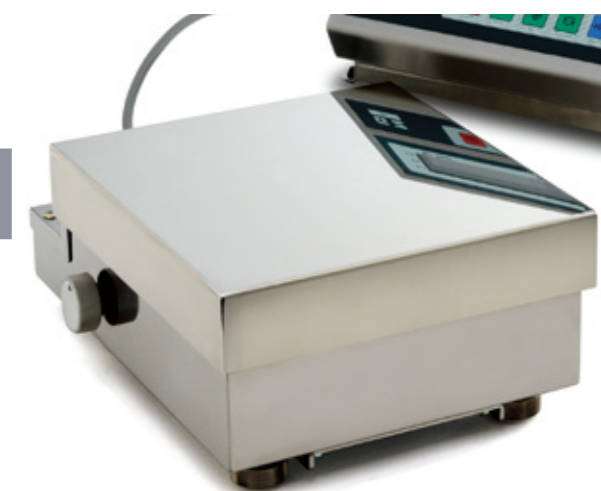


Always keep the scale in good condition

semi-automatic calibration with built-in weight (available only with GZH(-B) series). GZII(-B) series can be calibrated with external reference weight.

Stainless steel housing, tough body ideally fitted to industrial scene

mirror finish weighing pan available as standard in GZII(-B)2000(C)Ex, 6000(C)Ex, 12K(C)Ex, all models in GZH(-B) series



II 2 G Ex ia IIB T4
 Temperature range class for use in hazardous areas
 Gas classification
 Type of protection (intrinsically safe)
 Explosion-protected
 For gases
 Category 2
 Equipment group

in accordance with

IEC 60079-0:2004 Ed. 4 EN 60079-0 : 2006
 IEC 60079-11:2006 Ed. 5 EN 60079-11 : 2007

Operation area

	II A	II B	II C
T1	acetone, benzene, ammonia, methanol, ethane, toluene, propane, methane, acetic acid	coke-oven gas, acrylonitrile, hydrocyanic acid, cyclopropane	hydrogen
T2	ethanol, butanol, butane, methyl methacrylate	ethylene, ethylene oxide, ethyl acrylate	acetylene
T3	gasoline, hexane, pentane	acrylaldehyde, dimethyl ether	
T4	acetaldehyde, trimethylamine	ethyl methyl ether, diethyl ether	
T5			carbon disulfide
T6			ethyl nitrite

HJK series

Precision Industrial Scale

Water & dust proof, durable, high resolution

HJK series has IP rating 65 water and dust proof feature as standard. This series can be used in two styles, separate type with 1m cable or pole type. Separate type can be changeable to pole type with pole kit option. And cable length can be extended to 10m (option).

Specifications

Separate type										
Model	HJR-17KSE HJR-17KSCE	HJR-22KSE HJR-22KSCE	HJR-33KSE HJR-33KSCE	HJR-62KDSE HJR-62KDSCE	HJ-17KSE HJ-17KSCE	HJ-22KSE HJ-22KSCE	HJ-33KSE HJ-33KSCE	HJ-62KDSE HJ-62KDSCE		
Capacity	17000g	22000g	33000g	6200g 62000g	17000g	22000g	33000g	6200g 62000g		
Readability (d)	0.1g	0.1g	0.1g	0.1g 1g	0.1g	0.1g	0.1g	0.1g 1g		
Verification intervals (e)*1	1g	1g	1g	1g 1g	1g	1g	1g	1g 1g		
Repeatability	0.1g	0.1g	0.1g	0.1g 0.7g	0.1g	0.1g	0.1g	0.1g 0.7g		
Linearity	±0.3g	±0.3g	±0.3g	±0.3g ±1.0g	±0.3g	±0.3g	±0.3g	±0.3g ±1.0g		
Pan size	400x350mm	400x350mm	400x350mm	400x350mm	400x350mm	400x350mm	400x350mm	400x350mm		
Calibration	Internal & External	Internal & External	Internal & External	Internal & External	External	External	External	External		

Pole type										
Model	HJR-17KE HJR-17KCE	HJR-22KE HJR-22KCE	HJR-33KE HJR-33KCE	HJR-62KDE HJR-62KDCCE	HJ-17KE HJ-17KCE	HJ-22KE HJ-22KCE	HJ-33KE HJ-33KCE	HJ-62KDE HJ-62KDCCE		
Capacity	17000g	22000g	33000g	6200g 62000g	17000g	22000g	33000g	6200g 62000g		
Readability (d)	0.1g	0.1g	0.1g	0.1g 1g	0.1g	0.1g	0.1g	0.1g 1g		
Verification intervals (e)*1	1g	1g	1g	1g 1g	1g	1g	1g	1g 1g		
Repeatability	0.1g	0.1g	0.1g	0.1g 0.7g	0.1g	0.1g	0.1g	0.1g 0.7g		
Linearity	±0.3g	±0.3g	±0.3g	±0.3g ±1.0g	±0.3g	±0.3g	±0.3g	±0.3g ±1.0g		
Pan size	400x350mm	400x350mm	400x350mm	400x350mm	400x350mm	400x350mm	400x350mm	400x350mm		
Calibration	Internal & External	Internal & External	Internal & External	Internal & External	External	External	External	External		

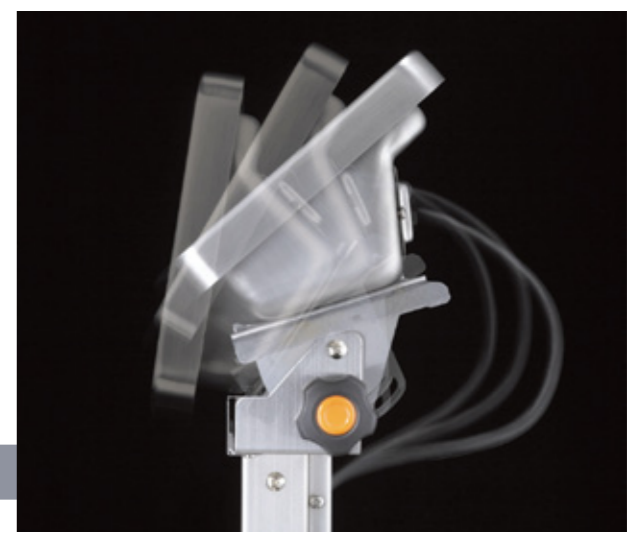
*1 "CE" models are OIML class II approved. Verification interval "e" is available only in "CE" models.

*For options, please see page 37.



Large fluorescent display

With clear and large fluorescent display the use can easily read the indication even in dark location.



Display angle adjustable

In pole style the angle of display part can be easily adjustable.



Connection to outside devices

RS232C output is equipped as standard. It can be easily connected to outside devices. *IP rating becomes ineffective when it is connected to outside devices.



Durable body with IP rating 65

HJK series has durable body made from stainless steel. Together with IP rating 65, it makes HJK series very much fitted to precise weighing work in hard environment.

FJ series

Chemical

Industry



Precision Platform Scale

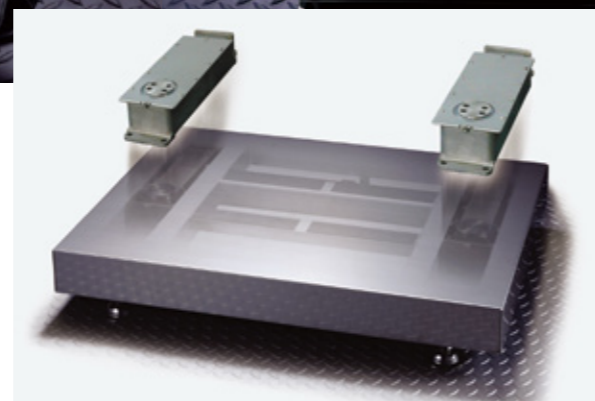
High precision, high capacity & wide weighing platform

FJ series offer you high precision 1g readability all through weighing range up to 300kgs. Furthermore the housing is made from stainless steel SUS304 which is highly resistant to chemical corrosion and rust (IP rating 65).

Specifications

Model	FJ 150K1G	FJ 300K1G
Capacity	150kg	300kg
Readability (d)	1g	1g
Repeatability	0.7g	0.8g
Linearity	±3g	±5g
Pan size	800×600mm	800×600mm
Calibration	External	External

*For options, please see page 37.



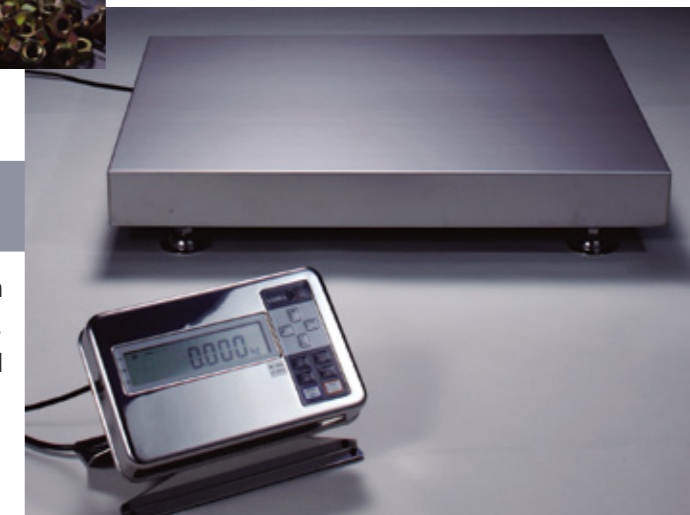
For rugged circumstances

High Capacity (and) High Resolution Weighing Platform and Indicator
IP65 dust and water protection



A whole (complete) set solution

This is a complete set of balance with platform and indicator. All covered with stainless steel



Flexible configuration

Indicator could be installed on the optional pole stand or desk stand, adapting to the every occasion.
RS-232 Interface is provided from the Indicator.

Useable Indicator

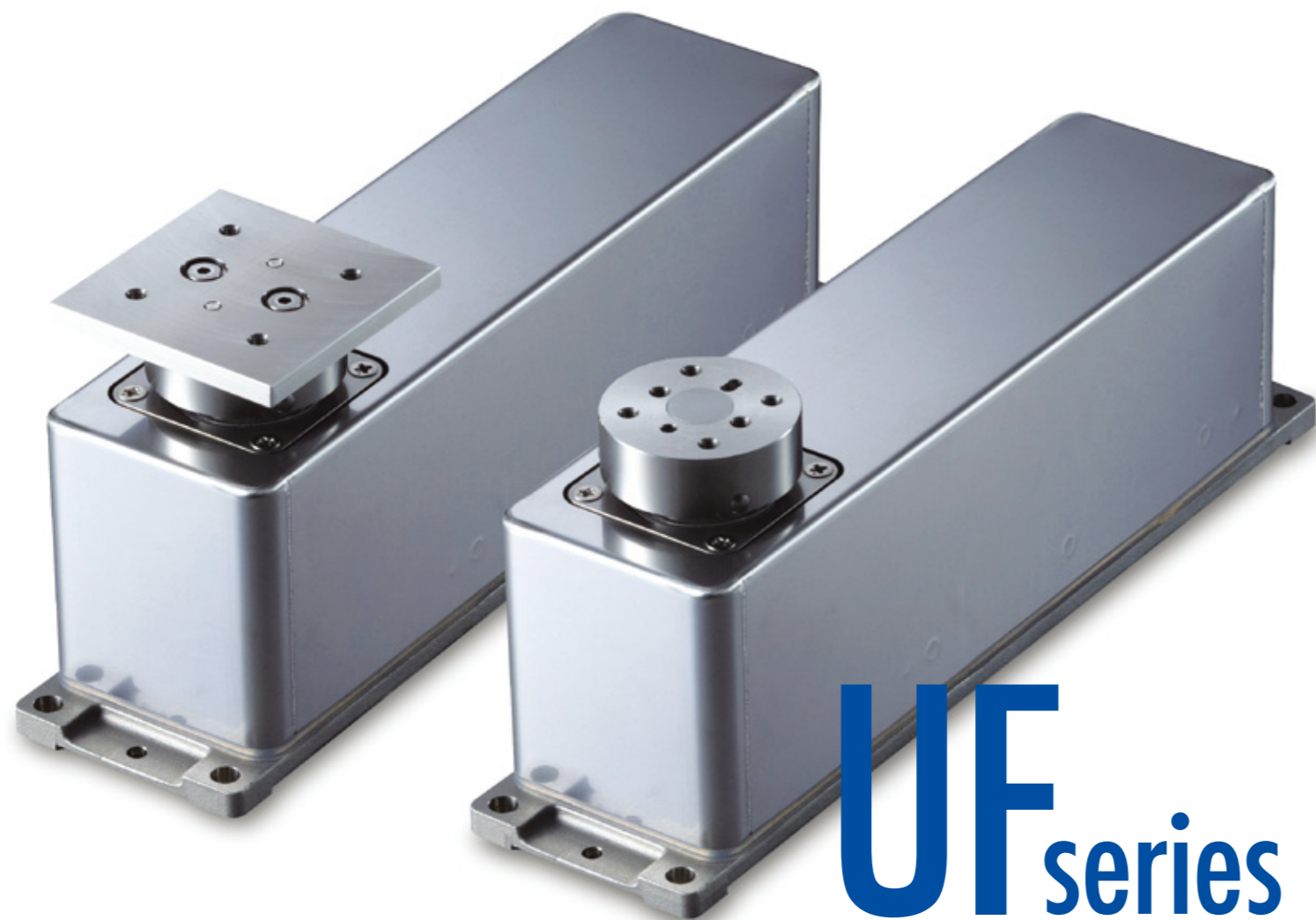
Clearly visible Back lit LCD display
Direct function setting with Direction Keys
Easy RES function can change response speed in three levels just with out- touch of SET key.



Chemical

Industry

Water proof



UF series

Built-in weighing unit

Suitable for applications in production lines where weighing is required

Space-saving design for the installation where space is limited

The width of the weighing unit is 56mm. This enables you to achieve greater productivity by disposing the weighing units in the limited space efficiently.

High precision & High speed

1mg readability & 1/620000 resolution with 0.4 seconds of stabilization time (load 5% of capacity). Also the data update interval is 100 times per second at maximum.

Direct digital output from the weighing unit

Easy connection to PLC or PC without indicator by RS232C or RS485 directly. This is suitable for efficient disposition of the weighing units and the wiring.



Specifications

Model	UF-620
Capacity	620g
Readability (d) *1	0.001g
Repeatability	0.001g
Linearity	±0.002g
Stabilization time *2	0.4 sec.
Data updating interval (max.)	100 times/sec.
Dimension (WLH)	56x230x85mm
Power supply	DC+24V±10%, 0.1A
Interface	Half duplex RS485, Full duplex RS232C 1200 to 38.4kbps

*1 switchable between 0.001g and 0.01g

*2 in case of load of 5% of capacity



DFB series

Built-in weighing unit

Suitable to install in production systems where weighing is required

Various models are available

Weighing units with capacities from 60g to 6kg are available. This line-up makes it possible to meet a variety of customer needs of making weighing systems.

Space-saving design of the weighing units

The weighing unit is designed to be arranged at a minimum pitch of 50mm (DFB-60), ideal for multiple-weighing unit configuration. The indicator, small enough to fit the palm of your hand, can be mounted separately from the weighing unit.

Ease of connection to PLC

DFB series is equipped with RS-232C or BCD parallel output (optional).

This makes it easier to connect DFB series to a controller in a system into which DFB series is to be built.



Specifications

Model	DFB-60	DFB-300	DFB-600	DFB-3000	DFB-6000
Capacity	60g	300g	600g	3000g	6000g
Readability (d)	0.001g	0.001g	0.01g	0.01g	0.1g
Repeatability	0.001g	0.002g	0.01g	0.02g	0.1g
Linearity	±0.001g	±0.003g	±0.01g	±0.03g	±0.1g
Pan size	40x40mm	55x55mm	55x55mm	74x74mm	74x74mm

Indicator and General Specifications

Display	7-segment, 6-digit fluorescent display tube
Data updating interval	Approx. 0.1 to 1.6 seconds. (Fix/Auto-change) selectable
Communication function	Bi-directional RS232C (featured as standard), BCD output (option)
Power supply	24 VDC (±10%), 0.3A

*For options, please see page 37.

SDI

Satellite Second Display



Just connecting to ViBRA balance through RS232C, SDI works as second display. It is convenient in various scene like face-to-face sales in jewelry shops, hang-on display in manufacturing line...

Specifications

Model	SDI	SDR
Display	LCD 12.5mm height	
Outer dimension	150×89×60mm (LWH)	
Power source	supply from balance	supply from AC adaptor
Cable length	1m	3m *1

*1 5m and 10m cable can be available as factory option.

CSP-160 II

Statistics Printer



CSP-160 II offers easy operation of useful statistics from weighing results. Contents of output in statistics are : number of data, maximum, minimum, average, standard deviation, range, total. And it can judge "OK", "HI" and "LOW" to limit values which users can set according to its own criteria.

Specifications

Model	CSP-160 II
Character construction	5×7 dot matrix
Printing digits	16 digits maximum
Character sizes	1.8mm(W)×2.5mm(H)
Dimensions	155×145×48(LWH)
Paper size	45mm(W)×30m diameter roll paper

RTS

Data-collecting Software

Ties the electronic balance to PC. With RTS software, you can take in RS-232C output data from SHINKO DENSHI electronic balance by the standard application software for PC. You can download RTS from our website free of charge . http://vibra.co.jp/global/download_center/index.html

Specifications

Operating system	Windows 98 Windows 98SE Windows NT4.0 (SP3 or more) Windows Me Windows 2000 Professional Windows XP Professional Edition Windows XP Home Edition
Recommended model	installed i486DX4 66MHz CPU or more.
Memory	16MB and more
Display of the resolution	640×480 or more
Free space to install	more than 20MB

Options

LF series pp.6-9

LFDK	Density measurement kit
LFUSB	USB output

LN series pp.10-13

LNBT	Rechargeable battery
LNLN	Relay contact
LNUH	Under weighing hook
LNBZ	Buzzer output
LNR4	RS422A output
LNDK	Density measurement kit

HT series pp.14-17

HTDK	Density measurement kit
HTBT *	Dry-cell battery pack

*not available for CE model

AJ series pp.18-21

AJBT(S)	Rechargeable battery (200g-1200g)
AJBT(M)	Rechargeable battery (2200g-12kg)
AJUH(S)	Under weighing hook (220g-1200g)
AJUH(M)	Under weighing hook (2200g-12kg)
AJDK	Density measurement kit

CJ series pp.22-23

CJ-R4	RS422A output
CJ-BZ	Buzzer output
CJ-LM	Relay contact
CJ-LS	Full pack (BZ, RS, LM)
CJ-BT	Dry -cell battery pack
CJ-WR	Water-proof cable for RS232C output
AJUH(S)	Under-weighing hook
CJ-AP(S)	Bucket for animal weighing (620g, 820g)
CJ-AP(M)	Bucket for animal weighing (2200-6200g)
CJ-AP(L)	Bucket for animal weighing (8200g-15kg)

SJ series p.28

SJBT(S)	Rechargeable battery (200g-1200g)
AJBT(M)	Rechargeable battery (2200g-12kg)
SJR(S)	RS232C output (220g-1200g)
SJR(M)	RS232C output (2200g-12kg)
SJLM(S)	Relay contact (220g-1200g)
SJLM(M)	Relay contact (2200g-12kg)
AJUH(S)	Under weighing hook (220g-1200g)
AJUH(M)	Under weighing hook (2200g-12kg)

CT series p.29

AJBT(S)	Rechargeable battery
CTCP	Carat pan

CUXII series p.30

CUXIIBT	Rechargeable battery
CUXIIJ	Printer output
CUXIIRS	RS232C output
CUXIILM	Relay contact

DME series p.31

DJR	RS232C output
DJBT	Rechargeable battery
DMELD *	Liquid measurement kit

*available only for DME-220HE

GZ series pp.32-33

GZR1 *1	Printer output (Din 5p)
GZR2 *1	RS232C output (D-sub 25p)
GZR4 *1	RS422A output (D-sub 25p)
GZLM *1	Relay contact output
GZPC *2	Extended power source cable
GZDS	Display stand

*1 available only for power supply box type
*2 Max 100, per 5m.

HJK series pp.34-35

HKBT	Rechargeable battery
HKBZ	Buzzer output
HJKLM	Relay contact
HJKPK	Pole kit
HJKR4	RS422A output
HJKUH	Under weighing hook
HJKPC	Extended pick-up cable (5m or 10m)

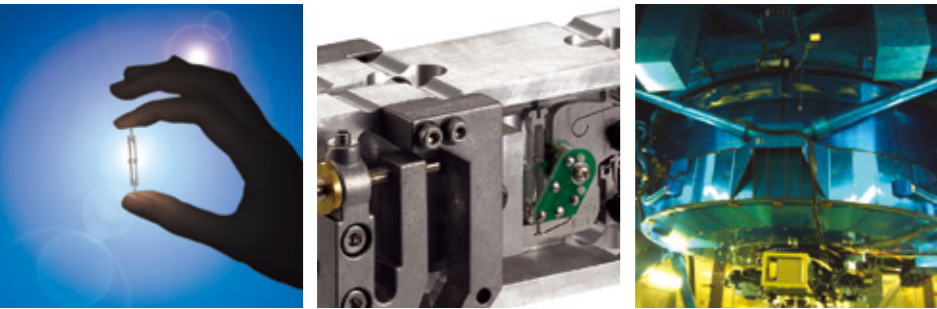
FJ series pp.36-37

FJLM	Relay contact
FJPS	Pole stand
FJDS	Display stand
FJPC	Extended pick-up cable (5m or 10m)

DFB series p.39

DFBBCD	BCD output
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Technology



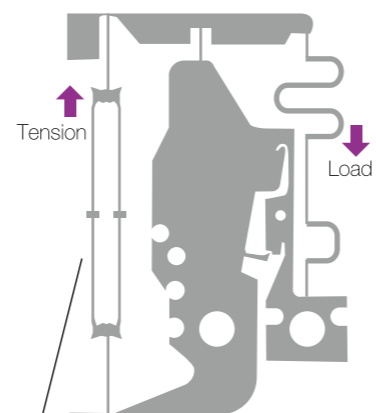
Our core technology : tuning-fork sensor

In the 1980s, by aiming to develop an original weight sensor SHINKO DENHI has developed the world's first tuning-fork sensor.

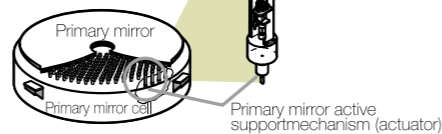
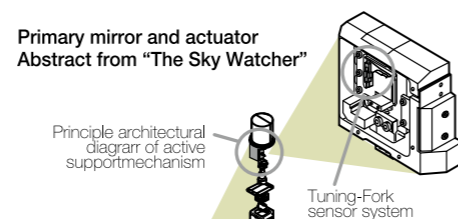
The invention of tuning-fork sensors has improved the performance and stability of precision balances and tuning-fork sensor technology has been staple of SHINKO DEH ever since.

Principle of tuning-fork sensor : stable of vibration frequency

The frequency of a tuning-fork, which produces a reference sound, is extremely stable. The vibrational frequency changes when force is applied. Taking advantage of this property, a tuning-fork sensor can be created by combining two tuning-forks, a top and a bottom, thereby forming a monoblock structure which further enhances the property. Using the principle that vibrational frequency changes when load is applied to the tuning-fork vibrator, we measure force and mass by digital output processing.



Tuning-fork vibrator
Schematic diagram of a tuning-fork sensor



SUBARU pictures presented by NAO

Why we use tuning-fork sensor?

Advantages of the electronic balances and scales with the tuning-fork sensor are high repeatability, excellent stability, high durability, excellent temperature characteristic, low power consumption and compact. We have received good reputations in not only domestic market, but also overseas market.

Eyes to universe : tuning-fork sensor in world's largest optical astronomical telescope

SHINKO DENSHI's tuning-fork sensors are used in the world's largest optical astronomical telescope, SUBARU, built by National Astronomical Observatory of Japan at 4,200-meter summit of Mr. Mauna Kea on the island of Hawaii.

With a diameter of 8.2m and a thickness of 20cm SUBARU's reflecting mirror is composed of ultra-low expansion glass. Because the mirror weighs a massive 23 tons, its surface is subject to gravitational distortion, which affects the focus. In order to solve this problem, precision technology to reduce the distortion in the telescope to a level less than $\pm 2\text{mm}$ within a surface diameter of 100km was necessary. 261 actuators which control the mirror surface require an extremely precise power sensor with excellent long-term stability, and among many sensors available, SHINKO DENSHI's tuning-fork sensors have been adopted.

About us

SHINKO DENSHI provides quality products and services through integrated system of production.

Since our founding, SHINKO DENSHI has performed every manufacturing process within company, from development and design to processing of parts, assembly and maintenance.

Made in Japan, the seal of reliability

We perform every manufacturing process in Japan, from processing of tuning-fork sensors, brain behind every electronic balances, to unit and product assembly.

That products "Made in Japan" are known for their precision and quality is an important factor for our products to win the praise and confidence all over the world.



SHINKO DENSHI values our partnerships with our customers.

Our products are highly valued for their quality all over the world. In order to expand further we are building a global sales and service network. Through the products we will continue to value our partnerships with our customers and business associates.



Domestic Bases



Head office/Tokyo office Overseas Div.

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Kansai Plant and Sales Office

Nagoya Sales Office

Overseas sales network

