

# TUNING-FORK ANALYTICAL BALANCES

## HT/HTR series



*New concept for Analytical Balances  
brought by ViBRA Tuning-fork sensor*





## ***Tuning-fork technologies bring new concept for Analytical Balances***

### ***Compact & Safe***

**by its simple, durable and unique structure**

### ***Plug & Perform***

**Warm up time is reduced by 90%(\*1)**

### ***Energy saver***

**Power consumption is cut by 60%(\*2)**

### ***Reliable result***

**Stable measurement is obtained in long term**

(\*1) compared with other VIBRA analytical balances based on electromagnetic system  
(\*2) compared with other balances with same capacity and readability range



# HT/HTR series

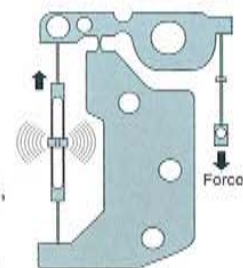


The tuning fork sensor is covered by a 5-year warranty that attests to its long-term stability and durability.

## ***Tuning-Fork Sensor — A Revolution in Weighing***

The Tuning-Fork sensor measures force or mass by gauging changes in oscillation frequency when a load is applied to a long, narrow vibrator, and it digitally outputs the readings.

Unlike load cell or electromagnetic systems, the tuning-fork sensor does not rely on material distortion, electromagnetic force, heavy power consumption, or A/D converters, so its inherent margin of error is extremely small, and its high precision can be maintained for a long time.



Double-Ended tuning fork (DETF) vibrator

## All features included



### Anti-electrostatic 360 degree transparent windshield

Composed of permanently anti-electrostatic plastic material, weighing can be visible from every angle.\*

\*not with optional glass windshield

### Back lit LCD

Measurement result is easily readable with bright display.



### Full automatic span adjustment, Automatic repeatability measurement (ARM)

The balance can be calibrated automatically to maintain in good condition. The condition is easily checked with single key operation by measuring and calculating repeatability standard deviation. (for HTR type only)



### Bar graph display

A 40-step bar graph display easily checks the current load's weighing against the capacity.

### Connection to PC

RS232C interface is equipped to connect to PC, printer and other outside devices.

### Single-touch Response Setting for various environments

The SET key sets different response in 3 steps in different environmental conditions.



### Operated by dry cell battery

It could be operated by dry cell battery with option requested. (factory option)



### Density determination mode

Density of solids or liquids is measured with optional density measurement kit.

### ISO/GLP/GMP compliant printing record

Calibration procedures and results are recorded and printed with an operational printer.

\*\*\*CALIBRATION\*\*

DATE: 2007. 12. 25  
TIME: 09: 24  
SHINKO DENSHI  
TYPE:  
HTR-220  
S/N: 071850025  
ID: 000101

CAL. INTERNAL  
REF: 220.0000 g

COMPLETE  
DATE: 2007. 12. 25  
TIME: 09: 25

SIGNATURE



## Specifications

HT(R)-XXXCE stands for EC type approval models.

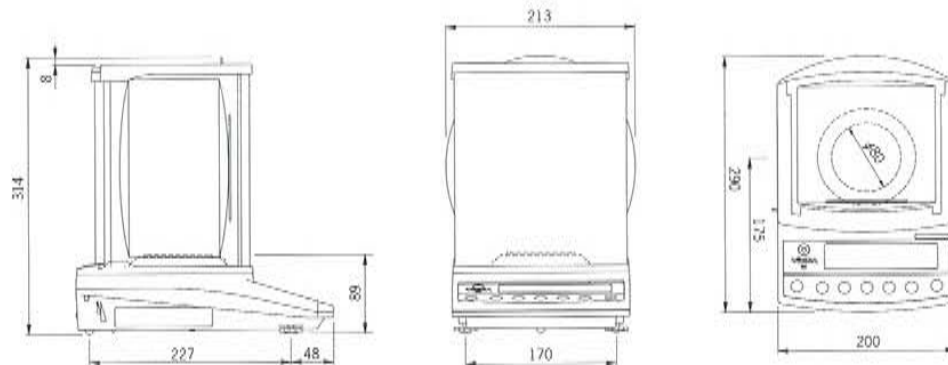
Model with EC approval	HT-80E HT-80CE	HT-120E HT-120CE	HT-220E HT-220CE	HTR-80E HTR-80CE	HTR-120E HTR-120CE	HTR-220E HTR-220CE
Capacity	80g	120g	220g	80g	120g	220g
Readability	0.0001g	0.0001g	0.0001g	0.0001g	0.0001g	0.0001g
Repeatability( $\sigma$ )	0.0001g	0.0001g	0.0001g	0.0001g	0.0001g	0.0001g
Non-Linearity	$\pm 0.0003g$	$\pm 0.0003g$	$\pm 0.0003g$	$\pm 0.0003g$	$\pm 0.0003g$	$\pm 0.0003g$
Pan size	$\phi 80mm$					
Dimensions	$290 \times 200 \times 306mm$					
Weighing units	mg, g, ct, oz, lb, ozt, dwt, GN, tI(Hong Kong), tI(Taiwan), tI(Singapore, Malaysia), momme, tola					
Power source	AC120/230V DC9V					
Output	RS-232C & peripheral device output					
Measuring system	Tuning-fork frequency sensing					
Tare	Full weighing range					
Calibration	by external weight			by built-in weight		
Display	LCD with backlight					
Modes	weighing, counting, percentage, unit converting, density					
Weight	Approx. 2.9kg					

## Options & Peripherals

HTDK: Density measurement kit  
 HTDB: Dry cell battery (factory option)  
 HTGW: Glass windshield (factory option)

CSP-160: Operation micro-printer

## Dimensions



(unit : mm)

The contents of this catalogue are subject to change due to modifications and/or other reasons.

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