










Specifications

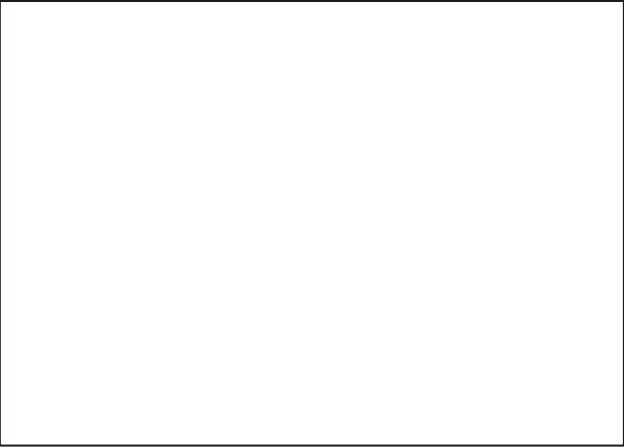
Model	SmartVibro VM-4424S	SmartVibro VM-4424H	SmartVibro VM-3024H	SmartVibro VM-7024H
Pickup type	Piezoelectric Type		Electro-dynamic Type	Piezo-resistive Type
Type	Standard	High-end	High-end	High-end
Frequency range	5 Hz to 10 kHz (acceleration) 10 Hz to 1k Hz (velocity)* 10 Hz to 150 Hz (displacement)* 1 kHz to 10 kHz (bearing) 3 Hz to 1 kHz (H function) <small>* Maximum frequency of velocity and displacement is restricted by acceleration limit 450 m/s<sup>2</sup>.</small>		10 Hz to 1 kHz (acceleration, velocity, displacement)	0.3 Hz to 100 Hz (acceleration) 3 Hz to 100 Hz (velocity, displacement)* <small>* Maximum frequency of velocity and displacement is restricted by acceleration limit 20 m/s<sup>2</sup>.</small>
Full scale	acceleration, velocity, displacement : 6 range, automatic switching bearing : 6 range, automatic switching H function : 6 range, automatic switching		acceleration : 6 range, automatic switching velocity : 6 range, automatic switching displacement : 6 range, automatic switching	acceleration : 6 range, automatic switching acceleration : 6 range, automatic switching acceleration : 6 range, automatic switching
Maximum mesurable range	acceleration, H function : 300 m/s <sup>2</sup> (RMS,EQP,PEAK) velocity : 1000 mm/s (RMS, EQP, PEAK) displacement : 10 mmp-p (EQP, PEAK)		acceleration : 100 m/s <sup>2</sup> (RMS,EQP,PEAK) velocity : 200 mm/s (RMS, EQP, PEAK) displacement : 1000 μmp-p (EQP,PEAK)	acceleration : 20 m/s <sup>2</sup> (RMS, EQP, PEAK) velocity : 100 mm/s (RMS, EQP, PEAK) displacement : 10 mmp-p (EQP, PEAK)
Sampling frequency	51.2 kHz		20.48 kHz	4096 kHz
Indication	PEAK : acceleration, velocity, displacement EQP : acceleration, velocity, displacement RMS : acceleration, velocity		PEAK : acceleration, velocity, displacement EQP : acceleration, velocity, displacement RMS : acceleration, velocity	PEAK : acceleration, velocity, displacement EQP : acceleration, velocity, displacement RMS : acceleration, velocity
Frequency response	±5 % (10 Hz to 5 kHz) +30 % / -50 % (5 Hz to 10 Hz, 5 kHz to 10 kHz)		±5 % (20 Hz to 500 Hz) +5 % / -15 % (10 Hz to 20 Hz, 500 Hz to 1 kHz)	±5 % (0.3 Hz to 100 Hz)
Accuracy	Sensitivity error	±5 % (for full scale value at 1 kHz)	±5 % (for full scale value at 80 Hz)	±5 % (for full scale value at 16 Hz)
	Range changeover error	±2 % (1 kHz standard)	±2 % (80 Hz standard)	±2 % (16 Hz standard)
Linearity	Linearity	±1 % (for full scale value at 1 kHz)	±0.5 % (for full scale value at 80 Hz)	±1.5 % (for full scale value at 16 Hz)
	Linearity	±1 % (for full scale value at 1 kHz)	±0.5 % (for full scale value at 80 Hz)	±1.5 % (for full scale value at 16 Hz)
Output	AC OUT : 0 to ±1 V (load10 kΩ or higher) DC OUT : 0 to +1 V (load10 kΩ or higher)		AC OUT : 0 to ±1 V (load10 kΩ or higher) DC OUT : 0 to +1 V (load10 kΩ or higher)	AC OUT : 0 to ±1 V (load10 kΩ or higher) DC OUT : 0 to +1 V (load10 kΩ or higher)
Language	Japanese, English, Chinese (switching)		Japanese, English, Chinese (switching)	Japanese, English, Chinese (switching)
Power supply	battery : AA×2pcs. (continuous approx. 20hours)		battery : AA×2pcs. (continuous approx. 20hours)	battery : AA×2pcs. (continuous approx. 20hours)
Size/Mass of body unit	74 (W) × 32.5 (D) × 148 (H) mm approx.230 g (including battery)		74 (W) × 32.5 (D) × 148 (H) mm approx.230 g (including battery)	74 (W) × 32.5 (D) × 148 (H) mm approx.230 g (including battery)
Size/Mass of pickup	Piezoelectric accelerometer φ19×42 (L) mm 40 g (pickup) φ6×195 (L) mm 70 g (probe) *including screw part		Electrodynamic velocity pickup φ25.8×50 (L) mm 140 g (pickup) φ8×50 (L) mm 20 g (probe)	Piezo-resistive accelerometer 45 (W) × 45 (D) × 45 (H) mm 200 g (pickup)
FFT analysis	—	Δf : 25Hz, 12.5Hz, 6.25Hz	—	Δf : 10Hz, 5Hz, 2.5Hz
Memory	—	SD card waveform data acquisition saving time : 0.1Sec./ 0.2 Sec./0.5 Sec./1 Sec. sampling frequency : 51.2 kHz	—	SD Card waveform data acquisition saving time : 1Sec./ 2 Sec./5 Sec./10 Sec. sampling frequency : 10.24 kHz
Option	• small size strong magnet [for flat surface] MH-202R (φ24×10.5 mm) 		• small size strong magnet [for spherical surface] MH-203R (φ24×20 mm) 	• magnet MB-PB 
	• long cable LC4 (4 m) 		• extension cable CE-3024-3 (3 m) CE-3024-6 (6 m) CE-3024-10 (10 m) 	• long cable CE-7000 (10 m) 
	• rubber jacket PC-3024 		• AC adapter PS-3024-3 	• carrying case C-3024 

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\*The specifications and design are subject to change without notice.



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Accurate and Easy Operation

SmartVibro

[VM-4424S/H, VM-3024H, VM-7024H]



VM-3024H

- 1 Low-price and high-functionally
- 2 Simultaneous measurement of acceleration, velocity and displacement
- 3 FFT analysis\*
- 4 Waveform data is saved into SD card\*

\*VM-4024H, VM-3024H, VM-7024H only

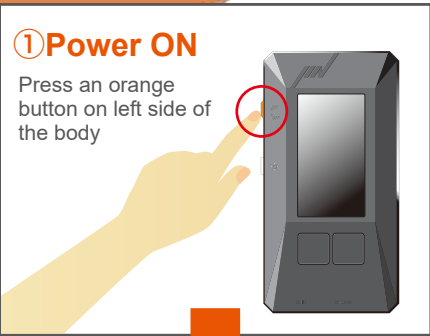
IMV CORPORATION

# Easy operation and simultaneous measurement of acceleration, velocity and displacement

Compact and multi-functional portable vibrometer in low price! Acceleration, velocity and displacement indicated simultaneously on LCD touch screen. It's very useful for the measurement of turbine, power generator, blower, pump or compressor. In addition to routine maintenance use, it can be used in shipping inspection or vibration investigation of electric appliances.

## Operation Procedure

**① Power ON**  
Press an orange button on left side of the body



**② Push a pickup against measurement spot**



**③ Measurement**  
Press a function button (L)  
When you press the button again, it stops the measurement.



**④ Confirm data**  
Confirm data on LCD Screen



**⑤ Judgment OK/NG**  
Comparison with past data  
(Caution when the value has significantly changed)



**DC OUT**  
DC output of measurement data

**Pickup Connector**

**AC OUT**  
AC output of measurement data

**Power**

**Backlight Switch**

**Function Button (R)**  
Displays the setting screen, range screen during measurement, etc.

**Function Button (L)**  
Starts/Stops measurement

**LCD Panel**  
Touch panel display

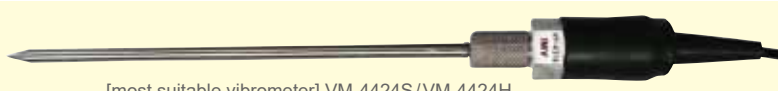
**SD Card Slot**  
Waveform data storage (VM-3024H/VM-4424H/VM-7024H)

**Power Connector**  
AC adaptor is available (option)


**Hand Strap Mount**

## Three usable pickups • • • suitable for various measurement scenes


**VP-4316**  
Piezoelectric type for wide frequency range  
[most suitable vibrometer] VM-4424S/VM-4424H



**VP-3024**  
Electro-dynamic type for small amplitude displacement  
[most suitable vibrometer] VM-3024H



**VP-7000L**  
Piezo-resistive type for low frequency vibration  
[most suitable vibrometer] VM-7024H



Multi-functions and low price

### Standard Model (VM-4424S)

- 1. Low price**  
Low-price and high-functionally
- 2. Simultaneous measurement**  
Just press one key and start measuring quickly, so it can reduce operation time and prevent miss-measurements.
- 3. Automatic switching (6range)**  
Automatic switching, no need for range setting
- 4. Three kinds of language is selectable**  
Japanese, English and Chinese
- 5. Light weight 230 g (including battery)**  
Lighter and more compact than conventional model

Convenient multi-functions add to the standard model

### High-end Model (VM-4424H / VM-3024H / VM-7024H)

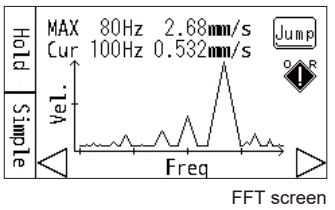
- 1. FFT analysis\***  
For further investigation of cause of vibration, SmartVibro is possible to perform frequency analysis by the minimum condition setting.
- 2. SD card data saving**  
Waveform data is saved into SD card as CSV format (Maximum 50 seconds\*)  
\* In case of VM-7024H
- 3. For low frequency vibration (VM-7024)**  
In case of measurement of low frequency under 1Hz. (Ground vibration or small displacement of machine tool.)

\*What is FFT analysis?  
FFT analysis is to extract frequency components from vibration waveform. By comparing frequency distribution, the cause investigation becomes possible.

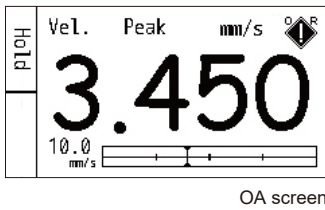
## SmartVibro function table

	Pickup Type	Piezoelectric Type				Electro-dynamic Type	Piezo-resistive Type
	Model	VM-4424S	VM-4424H	VM-3024H	VM-7024H		
		standard	high-end	high-end	high-end		
usability	Simultaneous measurement	○	○	○	○		
	Waveform data storage		○	○	○		
	FFT analysis		○	○	○		
object	Motor, Blower, Pump	○	○	○			
	Turbine			○			
	Generator			○			
	Mixer, Centrifuge				○		
	Crane, Bridge				○		
	Floor, Ground				○		

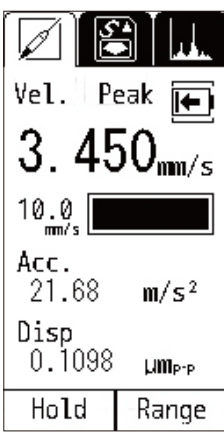
FFT screen



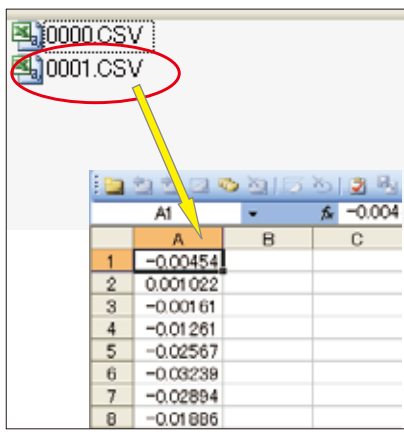
OA screen



simultaneous measurement screen

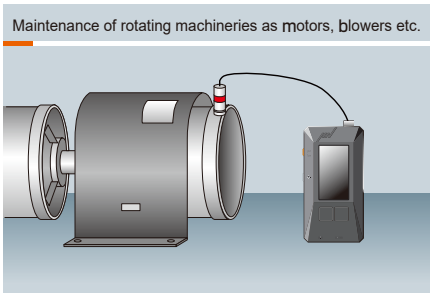


CSV import screen

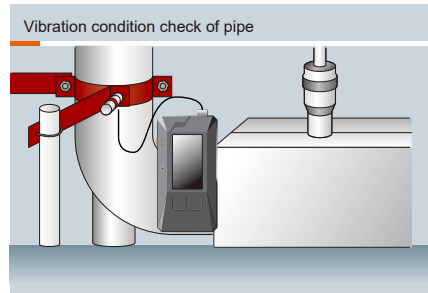


## Applications

Maintenance of rotating machineries as motors, blowers etc.



Vibration condition check of pipe



Measurements of small displacement of machine tools

