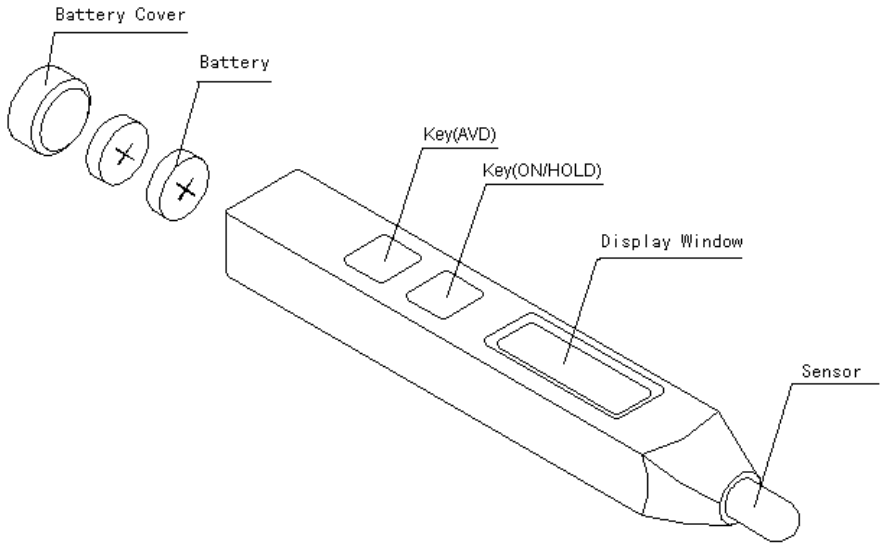
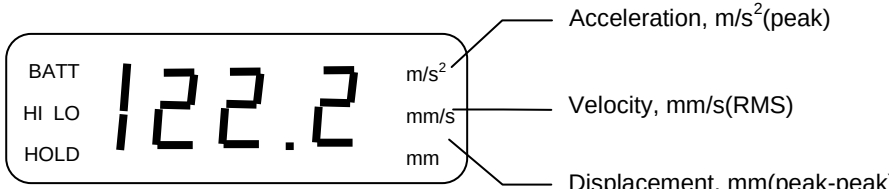
Vibration Pen

Manual

1. Structure


Battery Cover
Battery
Key(AVD)
Key(ON/HOLD)
Display Window
Sensor

2. Operation



Display window

Push the sensor on the plane being tested while keeping the pen perpendicular to it. Use the button “AVD” to choose the parameter. The order is “acceleration(LO)” → “acceleration(HI)” → “velocity” → “displacement” → “acceleration(LO)”. And then press the button “ON/HOLD” to start measuring. The measure value will be frozen when the button is released, and the LCD will show “HOLD”.

When the measure value is out of range, the LCD will show **1 .**. The result of the release time will be hold for about 40 seconds, and then the pen will turn down automatically.

When the LCD shows “BATT”, that means we should change batteries, or an error result may be given out. Additionally, two batteries must be changed simultaneously.

Note: this manual applies to two models Velocity and Versatile. The Velocity model just has the button ‘ON/HOLD’ and only the velocity parameter.

3. Features

Parameter	Acceleration, Velocity, Displacement
Testing range	Acceleration:0.1m/s^2-199.9m/s^2(peak) Velocity: 0.1mm/s-199.9 mm/s(RMS) Displacement: 0.001mm-1.999 mm (peak-peak)
Frequency range	Acceleration: 10Hz ~ 1kHz(LO) 1kHz ~ 15kHz(HI) Velocity: 10Hz ~ 1kHz Displacement: 10Hz ~ 500Hz
Accuracy	±5% ± 2digits
Display	3 1/2 digits LCD
Power supply	two button batteries(LR44 or SR44)
Battery capacity	Approx. 5 hours working continuously
Operating temperature	0℃ ~ 40℃
Humidity	<85%
Dimension	152mm×22mm×16mm

4. Configuration

	NO.	Item	Quantity
Standard Configuration	1	Main unit	1
	2	Screwdriver	1
	3	Batteries SR44\LR44 1.5V	2
	4	Box	1
	5	Document	1(set)

5. Attentions

- While changing batteries, with the anode towards “⊕” (downward).
- The pen has no remember function. To keep the record, please write it down.
- Test points should be chosen at the bearing, bearing support or other structure components that show the vibration characteristic explicitly.
- To keep the sensor contacting the plane being test close, pressure should between 5N and 20N. Also, the pen should perpendicular to the plane.

----------Appendix----------

ISO2372 Machine vibration grades

Velocity (RMS) mm/s	I	II	III	IV
0.28	excellent	excellent	excellent	excellent
0.45				
0.71				
1.12	good			
1.8		good		
2.8	bad		good	
4.5		bad		Good
7.1	forbidden		bad	
11.2		forbidden		Bad
18			forbidden	
28				forbidden
45				

Notes:

1. **Class Ⅰ is small motor（less than 15Kw）, class Ⅱ is medium motor(15Kw~75Kw), class Ⅲ is big motor(hard base), class Ⅳ is big motor(soft base).**
2. **The result should be gotten from three perpendicular directions of the bearing shell.**