

# Wireless Vibration Diagnostic Device D-VibA10

A compact patrol monitoring device that offers all-in-one high-spec vibration measurements and diagnosis functions.



# Wireless Vibration Diagnostic Device

Easy and speedy vibration measurements and diagnosis for rotating machinery



## Feature1

### Compact and Lightweight

A vibration pickup that fits in the palm of your hand.

Size:  $\Phi 48$  mm  $\times$  H 81 mm

Weight: 170 g

NSK makes patrol monitoring easy—Our portable vibration pickup connects wirelessly to your Android smartphone/tablet to provide accurate measurements and advanced diagnostics.



## Feature2

### Wireless Connection

Connects to your Android smartphone or tablet via Bluetooth®.

The vibration measurement / diagnosis app can be downloaded from Google Play.



## Feature3

### High Performance

Offers the same data processing functionality as commercially available FFT analyzers.

The app comes with a "ACOUS NAVI for Bearings" function for diagnosis of bearing flaking and scratches.



## Feature4

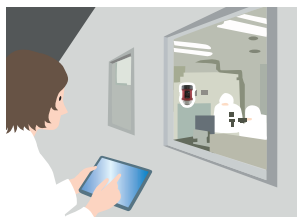
### Efficient Diagnosis

Supports manual/automatic vibration measurement modes, custom assessment levels for precision bearing diagnosis, easy re-diagnosis, and companion management software.

## Use Cases



In difficult-to-access equipment



In facilities such as cleanrooms



In high places



In shielded equipment

# Wireless Vibration Diagnostic Device

NSK's high-performance device measures vibration and diagnoses equipment problems on the spot.

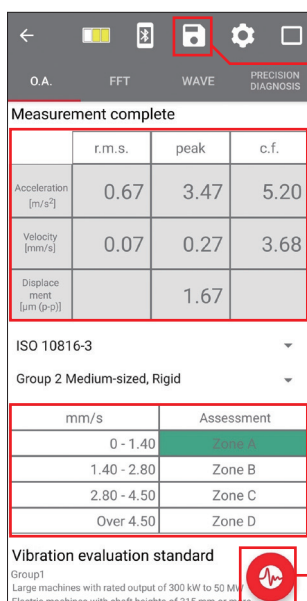
## Analysis/Assessment Functions

### Vibration Measurements/Analysis

Confirm machine conditions by analyzing vibration values and waveform patterns.

#### OA Mode

Measures and displays basic vibration parameters.



Saving of measured values

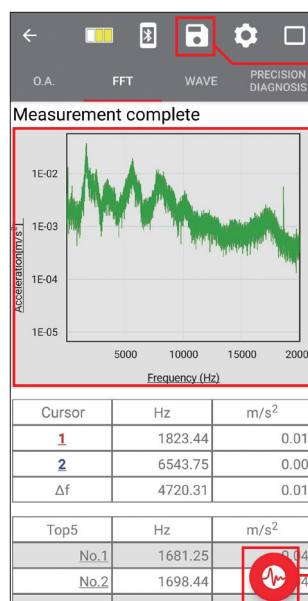
Measurement value of vibration

Assessment standard

Start of measurement

#### FFT Mode

Visualizes signals for vibration acceleration as a frequency spectrum.



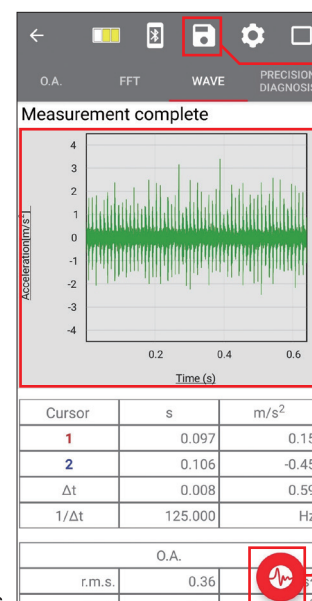
Saving of FFT spectrum data

FFT spectrum

Start of FFT analysis

#### WAVE Mode

Visualizes signals for vibration acceleration as a time-axis waveform.



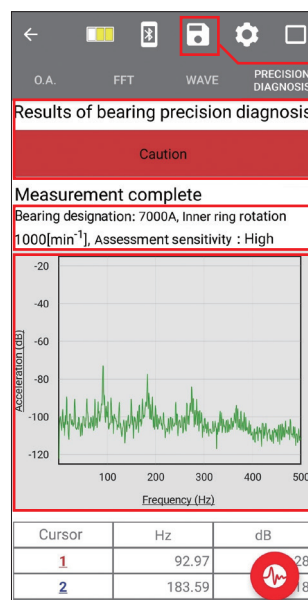
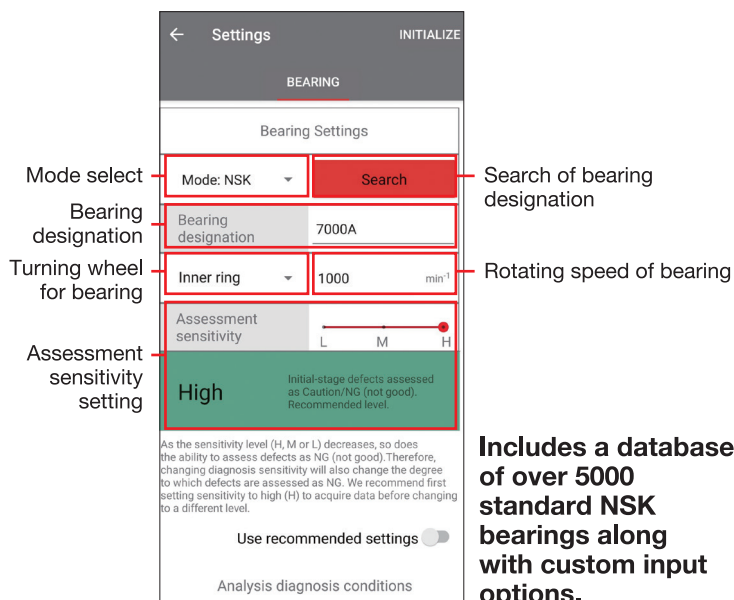
Saving of time waveform data

Time waveform

Start of time waveform analysis

### Precision Bearing Diagnosis

Automatically diagnoses flaws and flaking in bearings based on frequency components and bearing operating conditions.



Saving of bearing precision diagnosis results

Results of bearing precision diagnosis

Bearing precision diagnosis conditions

Diagnosis spectrum

Allows sound playback to confirm diagnosis results.

# Efficient Analysis/Assessment Functions

## 1. Manual Measurement Mode

Conditions for vibration measurements (OA), frequency analysis (FFT), time domain waveforms (WAVE), and precision bearing diagnosis can be set as desired for individual machines.

## 2. Automatic Measurement Mode

NSK's vibration diagnostic device is perfect for regular patrol inspections. In this mode, the device automatically measures vibration (OA), analyzes frequency (FFT), makes a time-domain waveform (WAVE), performs precision bearing diagnosis, and saves all data for future use.

## 3. 3 Sensitivity Levels for Precision Bearing Diagnosis

Assessments can be performed at three sensitivity levels: High, Medium, and Low.

### High

Initial-stage defects are assessed as NG (not good). Recommended level.

### Medium

Mid-stage defects are assessed as NG.

### Low

Advanced-stage defects are assessed as NG.

## 4. Re-Diagnosis Feature

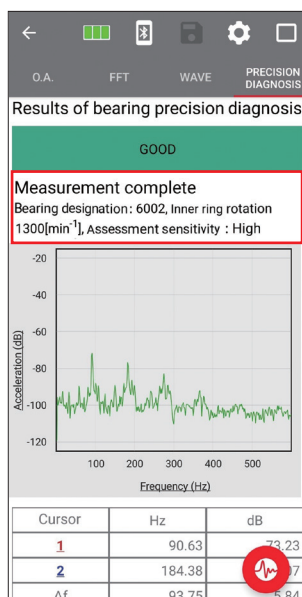
Easily re-diagnose saved vibration data after changing conditions like bearing designation and rotation speed—no new measurements needed.

Example)

Diagnosis of bearing with flaw on the inner ring raceway surface

Bearing designation: 7000A

Inner ring rotation: 1000min<sup>-1</sup>

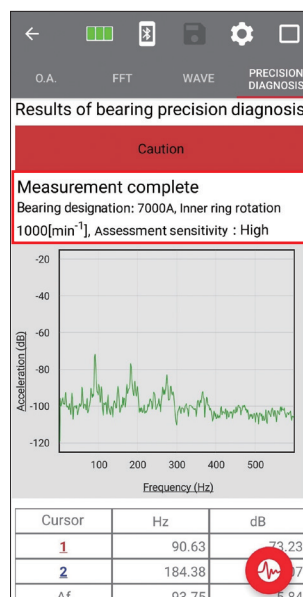


### Initial Diagnosis

Wrong bearing designation and rotation speed

Bearing designation: 6002

Inner ring rotation: 1300min<sup>-1</sup>



### Re-Diagnosis

Corrected designation and rotation speed

Bearing designation: 7000A

Inner ring rotation: 1000min<sup>-1</sup>

# Management software

Enables efficient measurements and data utilization



Manage data on a Windows PC with companion software on the included USB dongle.

## Patrol Route Settings

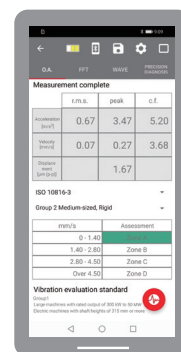
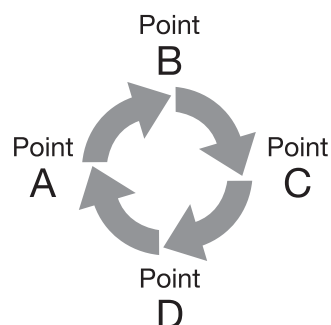
Management Software



Creating a Patrol Route

Improve work efficiency with patrol monitoring-Easily configure inspection routes in advance on PC.

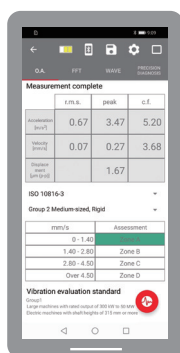
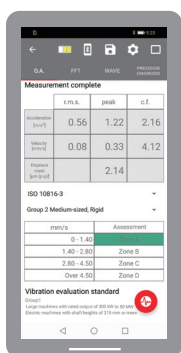
PC



Display measurement points in a fixed order each time and save results for later use.

Smartphone/Tablet

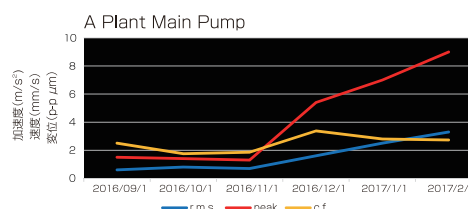
## Trend Management



Organize saved data by facility/equipment and check for rising trends in vibration values.

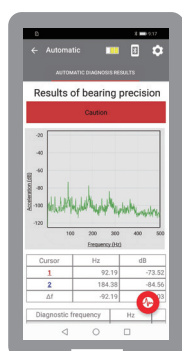
Smartphone/Tablet

Management Software



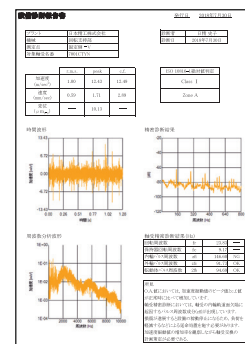
PC

## Creating Reports



Smartphone/Tablet

Management Software



Check saved data and select report data for output (Excel format).

PC



# Product Info



**Vibration Pickup**



ACOUS NAVI



## Vibration Measurement/Diagnostics App ACOUS NAVI for Vibration Diagnostic Devices

Available for download from the Google Play store.

Please download the app on your phone/tablet and follow the instructions to connect with the diagnostic device.

(This product does not include a smartphone or tablet device.)

# Product Specification

General	Wireless communications		Bluetooth Classic Class 1
	Wireless distance		About 40 m max. (in ideal environments)
	Supported OS for management software		Windows 10
	Supported Android OS		Android 8+
Calculations	Sampling frequency		Max. 51.2 kHz
	A/D conversion resolution		24-bit
	Measurement frequency band	Displacement	10 Hz–1 kHz
		Velocity	10 Hz–1 kHz
		Acceleration	10 Hz–20 kHz
	Measuring time		OA 0.1/1 .0 sec
	High-pass filter		10 Hz–10 kHz (Nine-phase)
	Low-pass filter		50 Hz–10 kHz (Ten-phase)
Vibration pickup	Mounting		Magnet, screw
	Usage/storage temperatures		+5 °C to +50 °C
	Operating humidity		90% or less
	Dustproofing/waterproofing		IP65 (IEC standard)
	Power supply		Rechargeable lithium ion battery (750 mAh)
	Power consumption		About 150 mA (standby time: About 8 hours @ 20 °C)
	Dimension		φ48×81 (H) mm
	Weight		Main unit: 170 g, Magnet: 50 g
	Type		Piezoelectric acceleration (built-in pre-amplifier type)
	Sensitivity		2 mV/m/s <sup>2</sup>
	Resonance frequency		About 18 kHz (when fixed by screw)
	Maximum measurable acceleration		About 735 m/s <sup>2</sup>
	Materials		SUS, aluminum alloy, PC composite resin

Check supported regions at [www.acousnavi.nsk.com](http://www.acousnavi.nsk.com).

## Worldwide Sales Offices

P: Phone ☆: Head Office

### NSK LTD. HEADQUARTERS, TOKYO JAPAN

INDUSTRIAL MACHINERY BUSINESS DIVISION-HEADQUARTERS P: +81-3-3779-7227  
AUTOMOTIVE BUSINESS DIVISION-HEADQUARTERS P: +81-3-3779-7189

### Aisia and Oceania

#### China:

#### NSK (SHANGHAI) TRADING CO., LTD.

JIANGSU ☆ P: +86-512-5796-3000

#### NSK (CHINA) INVESTMENT CO., LTD.

JIANGSU ☆ P: +86-512-5796-3000  
BEIJING P: +86-10-6590-8161  
TIAN JIN P: +86-22-8319-5030  
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XI'AN P: +86-29-8765-1896  
CHONGQING P: +86-23-6806-5310  
CHENGDU P: +86-28-8528-3680

#### NSK CHINA SALES CO., LTD.

JIANGSU ☆ P: +86-512-5796-3000

#### NSK HONG KONG LTD.

HONG KONG ☆ P: +852-2739-9933  
SHENZHEN P: +86-755-25904886

#### Taiwan:

#### TAIWAN NSK PRECISION CO., LTD.

TAIPEI ☆ P: +886-2-2772-3355  
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TAINAN P: +886-6-215-6058

#### India:

#### NSK BEARINGS INDIA PRIVATE LTD.

CHENNAI ☆ P: +91-44-2847-9600  
MUMBAI P: +91-22-2838-7787  
JAMSHEDPUR P: +91-657-2421144  
GURGAON P: +91-124-4838000

#### Korea:

#### NSK KOREA CO., LTD.

SEOUL P: +82-2-3287-0300

#### Singapore:

#### NSK INTERNATIONAL (SINGAPORE) PTE LTD.

SINGAPORE P: +65-6496-8000

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SINGAPORE P: +65-6496-8000

#### Thailand:

#### NSK BEARINGS (THAILAND) CO., LTD.

BANGKOK P: +66-2320-2555

#### Vietnam:

#### NSK VIETNAM CO., LTD.

HANOI P: +84-24-3955-0159

#### NSK REPRESENTATIVE OFFICE

HO CHI MINH CITY P: +84-28-3822-7907

#### Europe

#### France:

#### NSK FRANCE S.A.S.

PARIS P: +33-1-30-57-39-39

#### Germany:

#### NSK DEUTSCHLAND GMBH

DUSSELDORF ☆ P: +49-2102-4810  
STUTTGART P: +49-711-79082-0  
WOLFSBURG P: +49-5361-27647-10

#### Italy:

#### NSK ITALIA S.P.A.

MILANO P: +39-299-5191

#### Netherlands:

#### NSK EUROPEAN DISTRIBUTION CENTRE B.V.

TILBURG P: +31-13-4647647

#### Poland:

#### NSK REPRESENTATIVE OFFICE

WARSAW P: +48-22-645-1525

#### Spain:

#### NSK SPAIN S.A.

BARCELONA P: +34-93-289-2763

#### North America

#### United States of America:

#### NSK AMERICAS, INC. (AMERICAN HEADQUARTERS)

ANN ARBOR P: +1-734-913-7500

#### NSK CORPORATION

ANN ARBOR P: +1-734-913-7500

#### NSK PRECISION AMERICA, INC.

FRANKLIN ☆ P: +1-317-738-5000

SAN JOSE

#### Canada:

#### NSK CANADA INC.

TORONTO ☆ P: +1-888-603-7667

MONTREAL

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[www.nsk.com](http://www.nsk.com)

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