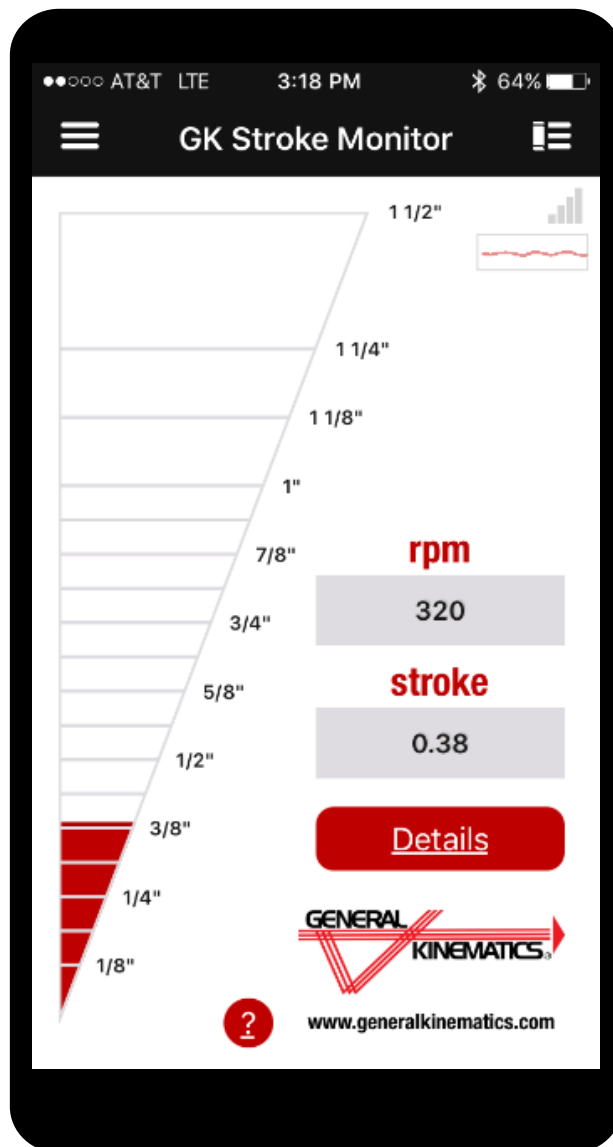


APEX™

Wireless Device



User Manual



The General Kinematics APEX™ Wireless Device is an easy, wireless way of monitoring your vibratory equipment utilizing our wireless accelerometer and GK Monitor App (see specifications for compatible models).

The GK Stroke Monitor App connects to the device via Bluetooth. The APEX™ wireless' rechargeable battery provides for hours of active monitoring and, when needed, can be recharged using the included USB cable.

The APEX™ Wireless comes with a strong magnet for quick and portable attachment. When you start the App, you will see the Stroke Plate screen. This screen displays the current level of vibration of the sensor in either inches or millimeters and the speed of the vibration in RPM. In order to start measuring vibration all you need to do is power-on the sensor unit and then connect the sensor via Bluetooth to your smartphone.



Settings Menu

The Settings Menu can be found by tapping on the “Gear” symbol at the top of the main menu. Use this menu to select between Imperial and Metric units.

Turn on the Advanced Features button if you wish to use the Frequency Scanner or collect frequency snapshot data.

You can enter a default email address on the Settings menu. This email address will be used to email stroke readings from the Detail Stroke screen.

The GK app comes pre-loaded with generic “equipment names” which you can use to collect and store vibratory measurements from your machine. For example if you have a vibratory feeder with a trough and an exciter, you could place the accelerometer on the left side of the trough at the feed end of the machine and then select the pre-loaded equipment name “Tr Feed End Left” or you could use the Settings menu to create an equipment name which is more meaningful to you such as “North Scrap Feeder #2”. Any names which you create on the settings menu will be available in the pull-down menu of the Detail Stroke screen.

This menu can also be used to connect the GK App with older GK cylinder shaped stroke monitors called “316 sensors”.

Getting Started...

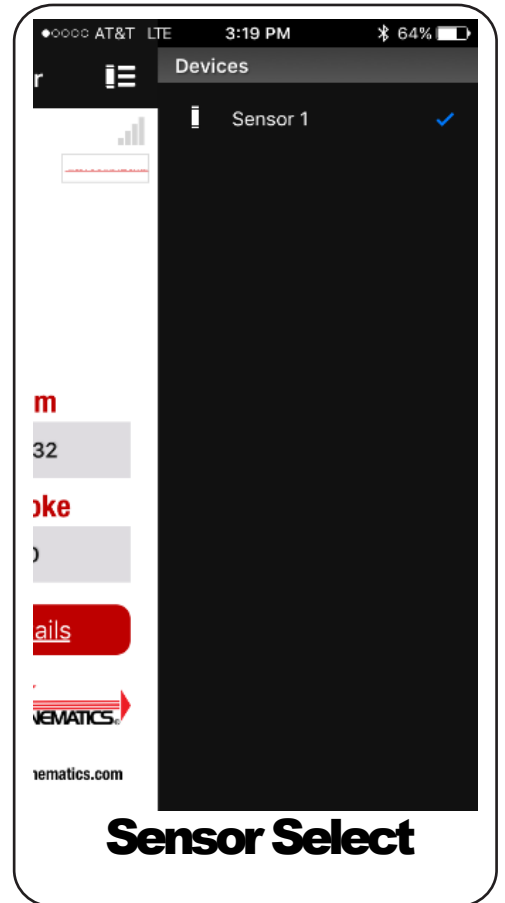
- 1.** Prior to first use, fully charge the APEX™ Wireless Device for 24 hours.
- 2.** To power on the device, shake the unit vigorously for at least 2 seconds, followed by two quick taps of the unit onto a hard surface.
- 3.** Make sure that “Bluetooth” is enabled on your smart phone.
- 4.** Start the GK Portable Stroke Monitor App on your smart phone.
- 5.** Use one finger to swipe the Stroke Plate display screen to the LEFT.
- 6.** Click on one of the sensors listed on the screen (see figure 2) and you will see a blue check mark indicating that the sensor is now connected to your smart phone via Bluetooth.
- 7.** Swipe the screen to the right to begin monitoring vibration.



Visit our YouTube channel to watch the video demonstration.



The Sensor Select screen can be accessed by pressing the top right corner of the Stroke Plate screen or by a finger swipe to the left. Here a list of available GK stroke monitors will be displayed. This list can also be updated using a finger swipe down and release. The user can then select the desired device to disconnect or connect to. When connecting to a device, a check mark will appear next to the selected accelerometer and the screen will automatically scroll to the Stroke Plate screen.



Sample details screen and email option capabilities.

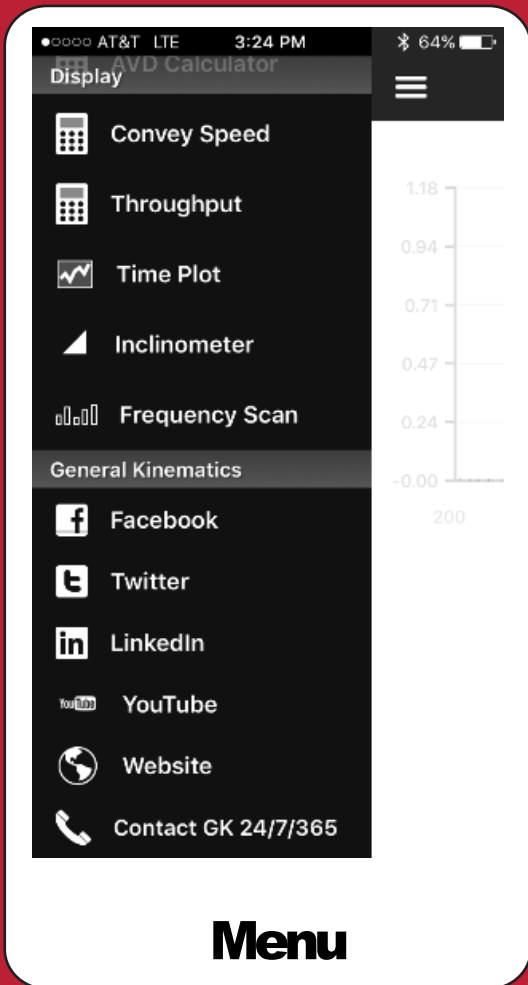
The screenshot shows an email composition screen. At the top, there is a "Cancel" button on the left and a "Send" button on the right. The "To:" field contains "kquinn@generalkinematics.com". The "Cc/Bcc, From:" field contains "KQuinn@generalkinemat...". The "Subject:" field contains "Measured data for: Bal Disch End Right". Below the subject, there is a timestamp "Jul 22, 2017, 3:23:29 PM CDT" and the text "Measured data for: Bal Disch End Right". Below this, there is a list of data: "RPM 4022", "X Stroke 0.00", "Y Stroke 0.00", "Z Stroke 0.00", "Total Stroke 0.00 inch", and "Angle To Vertical 123.58". At the bottom, there is a file icon and the text "data_Bal Di...nd Right.csv".

Details Screen

The screenshot shows a mobile application interface titled "Refreshing Device List". At the top, there is a status bar with "AT&T LTE", "3:23 PM", and "64%" battery. Below the title bar, there is a list of nodes. The first node is "Node 1" with the ID "27B2176B-7FB6-D124-8F...".

Device Update

*Multiple accelerometers can be used.
Note: the app will connect only to one accelerometer at a time.*

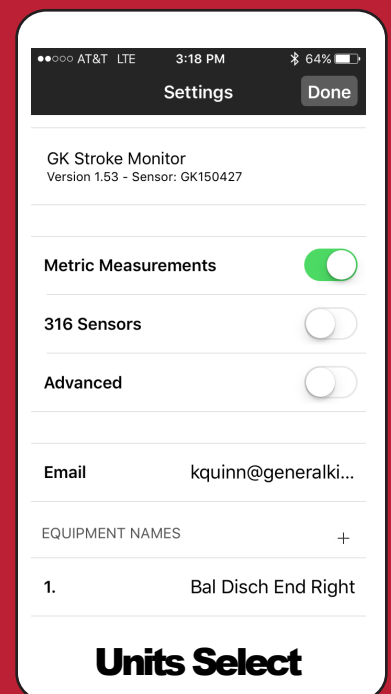


How to Get Help:

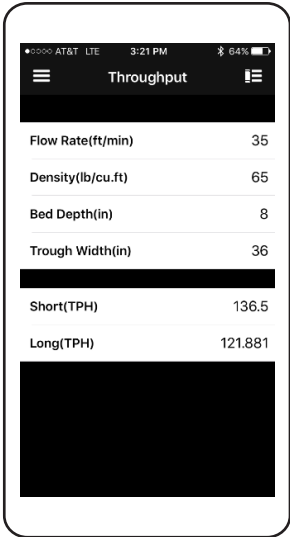
If you need directions on using the Stroke Monitor you can click on the red question mark symbol on the bottom of the Stroke Plate Screen. If you need more help, or have questions, call GK. The easiest way to do that is to swipe RIGHT on the stroke monitor screen to see the Main Menu. If you click on the “Contact GK” button at the bottom of the Main Menu you will be connected to our GK customer support hotline.

By pressing the top selection, Settings, the user can Turn metric measurements on or off. For Apple users, this screen also allows you to connect to and use first generation GK wireless accelerometers.

Press the Done selection in the upper right corner to close the screen.

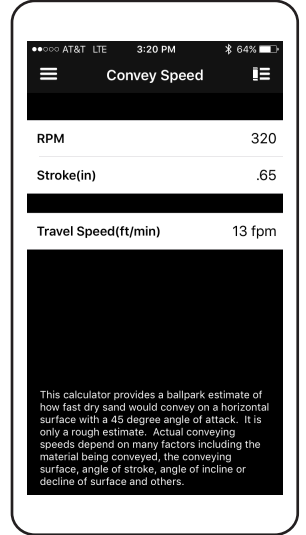


If you have any issues or need help troubleshooting the GK Portable Stroke Monitor, please call our component sales department at 815-455-3222 or email compsalesgroup@generalkinematics.com.



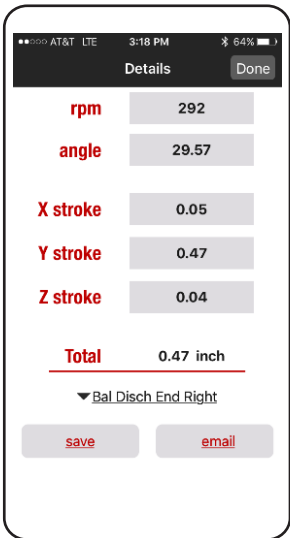
Convey Speed Estimator

The Conveying speed estimator will provide an estimate of how fast dry sand would convey on a horizontal surface vibrating at any given speed and stroke.



Through Put Calculator

The Throughput calculator computes the machine throughput in Tons Per Hour that a vibratory machine can process for a given conveying speed, material density and trough size.

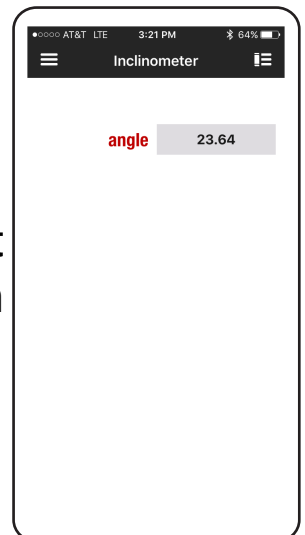


Stroke Plate

The Stroke Plate screen shows you the Total Vibration level of the machine you are monitoring. If you would like to see details on how much the unit is vibrating in the individual X, Y and Z directions or if you would like to know the angle of vibration, click on the red DETAILS button on the Stroke Plate screen. The Details screen also allows you to “save” the current vibration level data or to “email” the current vibration level data.

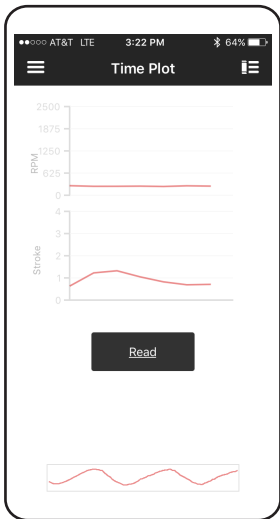
Inclinometer

The inclinometer display shows the angle between the X-axis printed on the front of the device and the horizon. In order for this value to display correctly, the device must be mounted onto a vertical surface. The inclinometer can be used to measure the incline or decline of any machine or structure.





Other Reporting Features

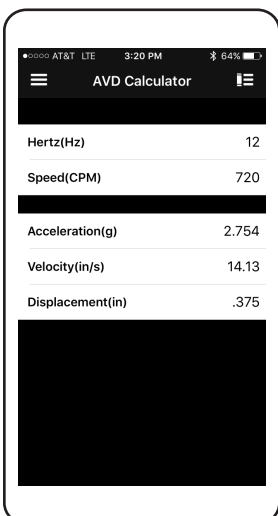
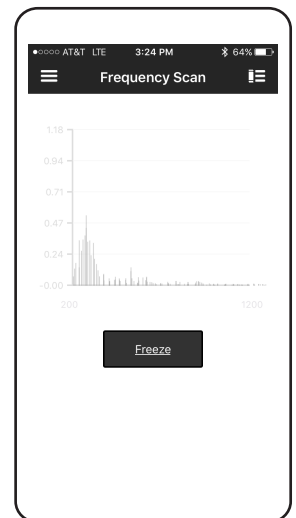


Time Plot

The Time Plot screen shows the recent vibration and speed-of-vibration measurements taken with the device. This feature is particularly useful to troubleshoot equipment where the vibration levels are changing over time.

Frequency Scan

The Frequency Scan is an advanced feature. It can be activated by turning on the advanced feature switch on the Settings menu. To use the frequency scanner, mount the device on a machine that is OFF. Start the scanner and then firmly tap a portion of the machine using a blunt object or rubber mallet. After a few seconds, a frequency response plot will show the presence of the natural frequencies of the machine between 200 and 1200 rpm which are causing vibration in the Z-direction of the device.



AVD Calculator

The AVD calculator will compute the Acceleration, Velocity and Displacement of a vibrating machine. To use the calculator you enter the speed of vibration and ONE of the AVD values. The calculator will compute the other two AVD values for you.



Learn more about the
Apex Wireless Device
here and download the app.
<http://bit.ly/1MFpwVS>

Main Sensor Specifications

Dimensions (with magnet): 93mm x 54mm x 18mm

Weight (with magnet): 107 grams [3.8 ounces]

Approx. Battery Life: 12 hours continuous monitoring

Approx. Charge Time: 1 hour

Connections: Bluetooth; micro-USB (Li-Polymer battery charging)

Wireless Range: 15 meters [50 feet] (subject to environmental conditions)

Approvals: FCC, CE

Apple Devices: iPhone 4s, iPhone 5(s), iPod Touch 5th gen., iPad 3 or newer, iPad Mini

Android Devices: Compatible with any device running v5.1 or newer

Distance: Over 15ft [4.5 meters]

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