

# BlueDial

Bluetooth Digital Dial Indicator

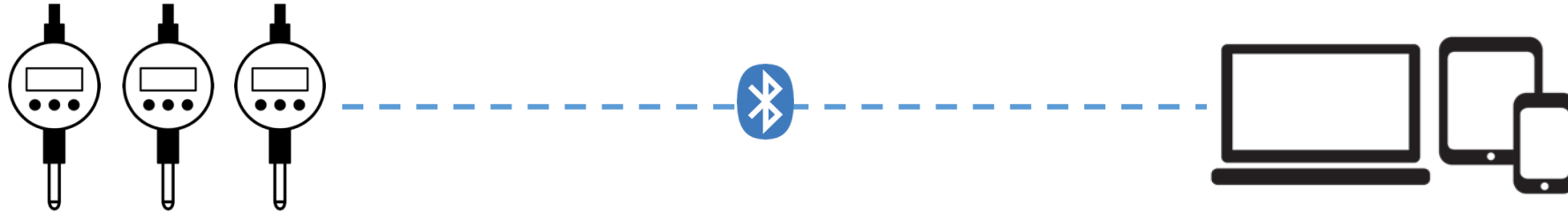
# BlueDial

BlueDial is a smart wireless Bluetooth digital dial indicator allowing users to remotely view and record on their smart device or Windows PC. Measurements can be taken in single or continuous modes from one or multiple BlueDials simultaneously.

Motionics BlueDial integrates a Mitutoyo Digimatic dial indicator with Bluetooth Low Energy technology. It has the absolute measurement and high resolution, high-accuracy, high-quality build of a Mitutoyo dial, as well as a built-in Bluetooth transmitter.



# How It Works



## MultiGage iOS/Android

See live readings of all gauges, capture in single and continuous modes, save, view, plot, export CSV, etc.

## MultiGage Windows\*

### Option 1: Direct Mode (using MultiGage software)

See live readings of all gauges, customize dashboard, capture in single and continuous modes, save, view, plot, export CSV, etc.

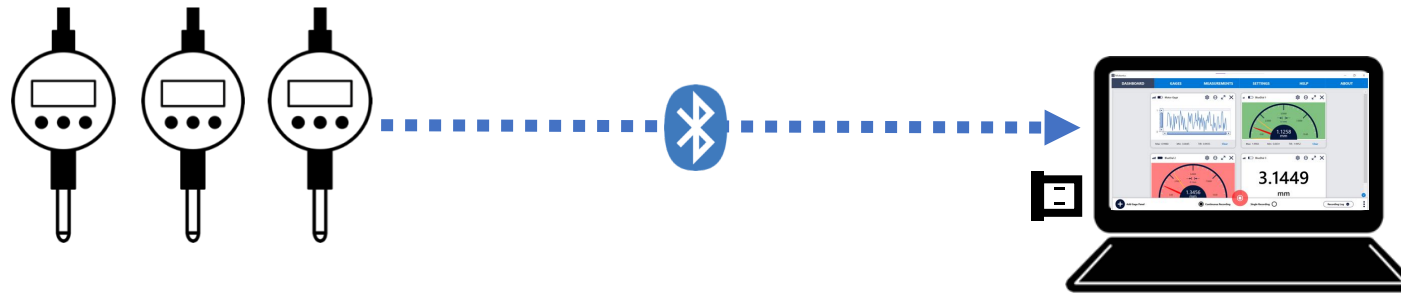
### Option 2: Keyboard Entry Mode (MultiGage software running in the background)

With MultiGage running in the background, captured data (single/continuous) is entered into another software (such as Excel, text editors, or any SPC software) as keyboard entry.

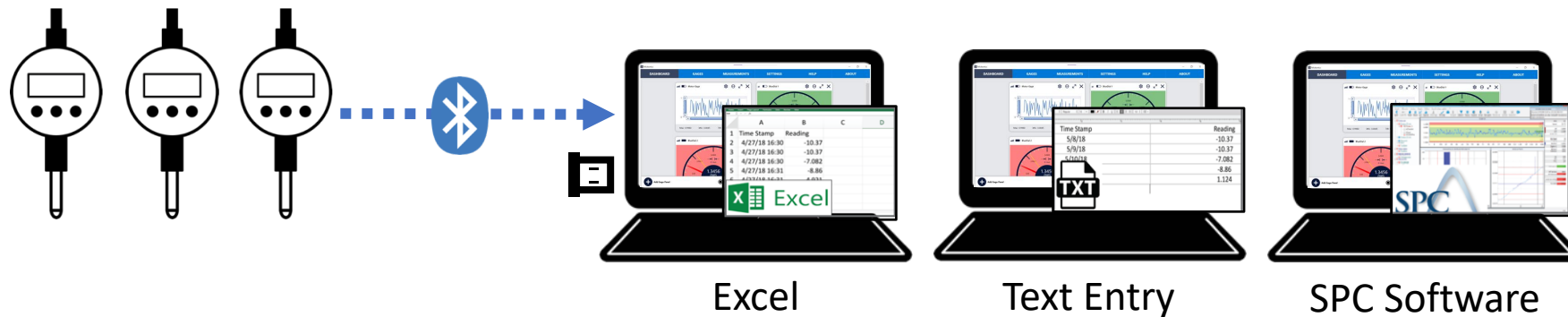
\*Bluetooth USB Dongle required for Windows use

# How It Works: MultiGage Windows

## MultiGage Windows: Direct Mode



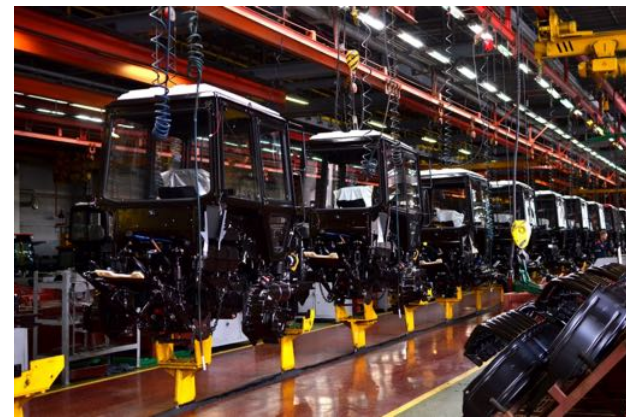
## MultiGage Windows: Keyboard Entry Mode



# Applications

- Continuous recording
- Readings from multiple dials at the same time
- Reading from multiple gauge types (pressure, deflection, etc.) at the same time
- Avoiding unsafe measurement conditions
- Measuring in difficult-to-reach areas
- Eliminating human error

Pile Load Testing • Mining & Excavation • Manufacturing • Quality Control & Inspection



# Models

BD10-783: 0.0005 in/0.01 mm resolution

BD10-793: 0.0001 in/0.001 mm resolution



# Specs

Model	BD10-783	BD10-793
Measurement Range	.5 in/12.7 mm	
Resolution	0.0005 in/0.01 mm	0.0001 in/0.001 mm
Accuracy	0.0008 in	0.00012 in
Wireless Data Rate	10 Hz	
Transmission Range	20 m (indoors)/30 m (outdoors)	
Working Temperature	0 - 50°C	
Rechargeable Battery	400 mAh	
Battery Life	60 hrs	
Charging	5 VDC USB	

# Bluetooth Transmission

The transmitter is located on the back of the dial. It is recommended to have a clear path between the transmitter and the receiving device.

It is also recommended to have the transmitter facing your receiving device.

Transmission Range:  
20m (indoors)/30m (outdoors)



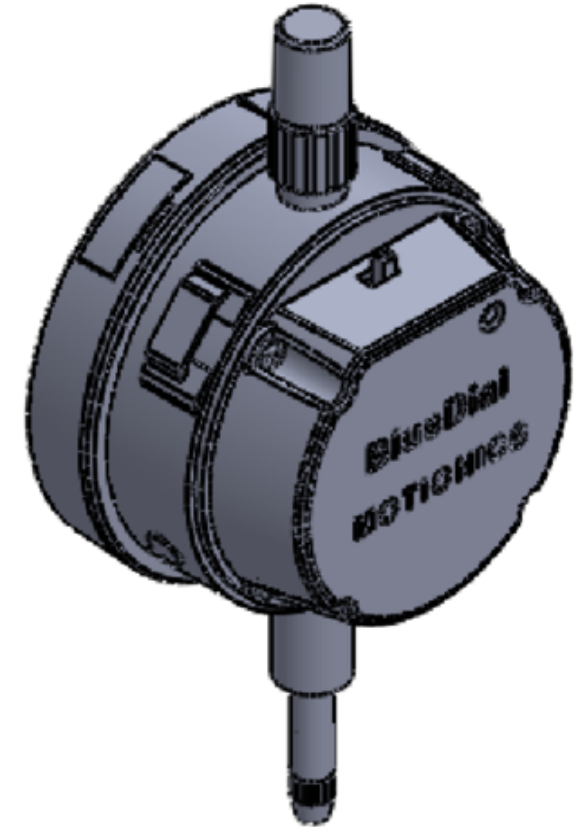
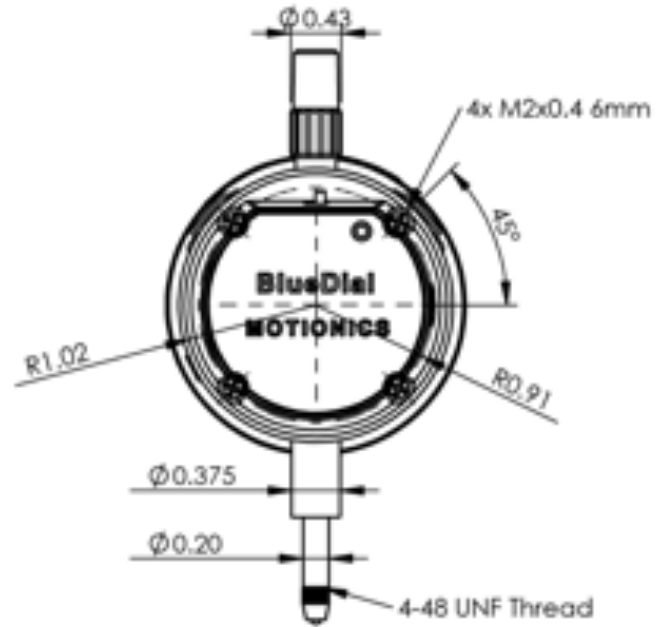
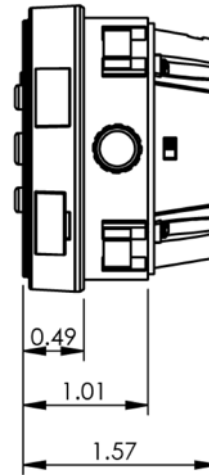
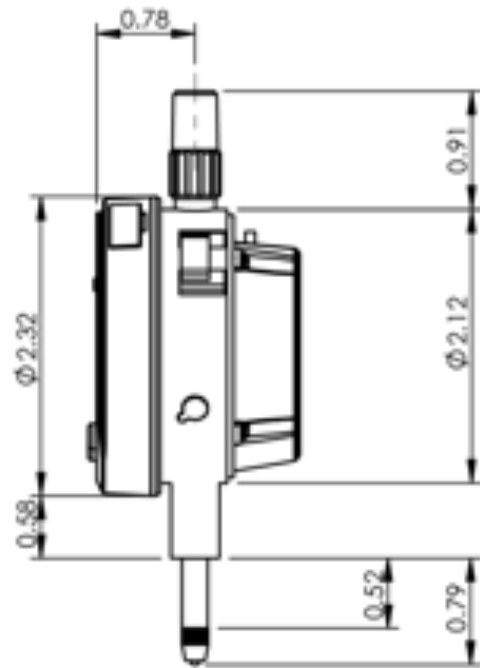


# BlueDial Diagram

1. Dial on/off Button
2. Origin button: to zero the dial
3. Unit button: mm/inch
4. SPC output: data output
5. Dial battery
6. BLE on/off switch
7. Status LED (red: charging, green: fully charged, blue: Bluetooth on )
8. MicroUSB charging port for Bluetooth transmitter
9. Stem for holding the dial



# Dimensions

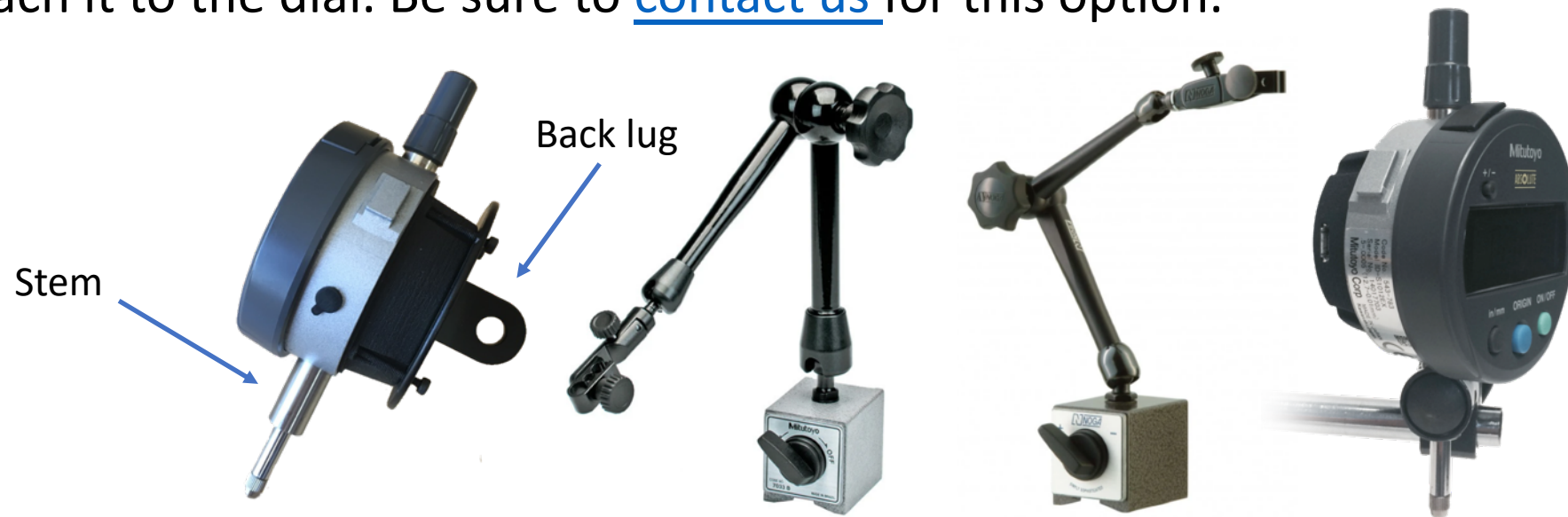


# Mounting Options

BlueDial can be mounted by the stem or with a lug back.

The stem size is 3/8" to be mounted by a [magnetic base](#).

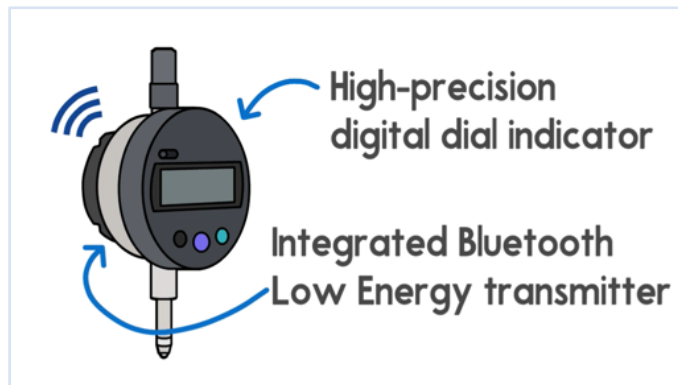
To mount the dial on the back, you'll need a lug back and four M2-0.4×20 screws to attach it to the dial. Be sure to [contact us](#) for this option.



# Videos

To see BlueDial in action and learn more, [check out our BlueDial playlist.](#)

## [Introduction](#)



## [Product Demo](#)



## [Model Video](#)



# Included Hardware

- BlueDial x1
- USB Charging Cable x1
- USB Power Adapter x1
- User Manual x1
- Manufacturer Inspection Certificate x1
  
- BLE Dongle (Optional, required for PC use)
- ISO 17025 Calibration Certificate (Optional)
- Protective Case (Optional)
- Extended Warranty (Optional)
- WiMER Trigger: Wireless Trigger Switch (Optional)
- Magnetic Base (Optional)



# Optional Accessories: Protective Cases

## Cases\* Comparison Table



1010



1040



1120

Product ID	1010	1040	1120
Dimensions	4.37" x 2.87" x 1.68"	6.50" x 3.87" x 1.75"	7.29" x 4.78" x 3.33"
Carries	Exactly one BlueDial	BlueDial and all charging accessories	BlueDial and all charging accessories
Protection	IP67 - Water/dust proof	IP67 - Water/dust proof	IP67 - Water/dust proof

# Optional Accessories: Magnetic Bases

## **Magnetic Bases** \* *Comparison Table*

	<b>Magnetic Base</b> Minotops 70338  70338	<b>Magnetic Base</b> NOGA DG61003  DG61003
Product ID		
Applicable Holding Stem Diameter	6 mm, 8 mm, 9.53 mm (3/8")	6 mm, 8 mm, 9.53 mm (3/8")
Dovetail Groove	Provided	Provided
Magnetic Pull	132 lbs	176 lbs
Overall Length	15"	11"

# Optional Accessories: WiMER Trigger, Wireless Trigger Switch

(sold separately, available only for Windows)

[WiMER Trigger](#) is a wireless trigger switch that can be paired on a Windows PC as a regular wireless keyboard. It comes with a small hand trigger switch. The switch connector (2.5mm audio connector, adapter needed for other sizes) can also connect to a foot switch if needed.

When our MultiGage software is running, every time the user presses the switch on WiMER Trigger, an F9 key stroke is sent to the computer and triggers MultiGage software to capture a set of current readings of all connected devices. If another software is running as active window and accepts keyboard entry, such as Excel, device readings will be directly keyed into the active software.





# Data Capture Options

With BlueDial, you can capture data continuously (up to 10 samples/sec) or in single data point. You can switch between the two in the software.

There is no button on BlueDial that can be pressed to trigger data capture.

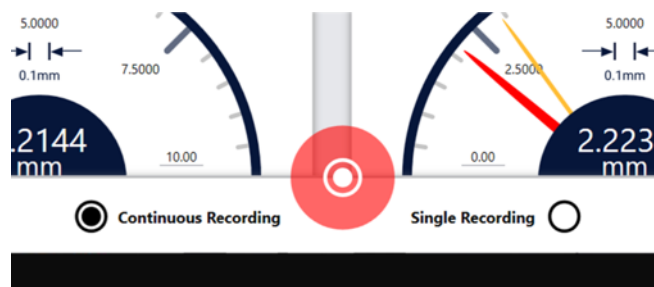
You can trigger data capture by:

- 1- tapping capture button in the software
- 2- pressing the button on a [wireless trigger switch](#) (sold separately, only for Windows)

Also, foot switch can be connected to wireless trigger switch

- 3- hitting the F9 (customizable) key on your keyboard (only for Windows)

With options 2 & 3 you can directly enter the readings into Excel or any other software



# Calibration

BlueDial comes with a manufacturer inspection certificate.

If needed, you can add an [ISO 17025 calibration certificate](#) to BlueDial (sample to the right). ISO Calibration takes 7-10 business days, and you can purchase it separately on our online store.

It is recommended to do annual calibration. For recalibrating your BlueDial, visit the [Motionics Calibration](#) page. ISO 17025 calibration takes 7-10 days and manufacturer calibration can be done in-house in 1 business day.

Third-Party Accredited Lab Logo

Third-Party ISO 17025 Accredited Lab

**Certificate of Calibration**

Calibrated for:  
MOTIONICS LLC  
8500 SHOAL CREEK BLVD  
BLDG 4 SUITE 209  
AUSTIN TX 78758

Bluetooth ID: 769-1069  
Gage Type: BLUETOOTH INDICATOR  
Manufacturer: MOTIONICS LLC  
Model Number: EDID-750  
Size: 0.5 INCH  
Temp/PH: 70/PPF /ASGN  
Location:

Work Order #:  
Purchase Order #:  
Serial Number:  
Department: N/A  
Performed By:  
Received Condition: IN TOLERANCE  
Returned Condition: IN TOLERANCE  
Cal. Date:  
Cal. Interval: 12 MONTHS  
Cal. Due Date:

Cal No.:

Calibration Notes:

Seq.	Description	Standard	Tolerance +	Tolerance -	As Found	As Left	UOM	Result	Uncertainty
1	Tare/ast	0.000	0.000	0.001	0.000	0.000	IN	Passed	0.0010
2	Tare/ast	0.200	0.199	0.201	0.199	0.199	IN	Passed	0.0010
3	Tare/ast	0.300	0.299	0.301	0.299	0.299	IN	Passed	0.0010
4	Tare/ast	0.400	0.399	0.401	0.399	0.399	IN	Passed	0.0010
5	Tare/ast	0.500	0.499	0.501	0.499	0.499	IN	Passed	0.0010

Standards Used to Calibrate Equipment

I.D.	Description	Model	Serial	Manufacturer	Cal. Due Date	Traceability #
CT241	GAZE BLOCK SET	GRADE AA	275	OM		
08028	IMPACT PLATE	IN	755	FORMOSA-IGNARTE COMPANY		

Calibrating Technician: \_\_\_\_\_ OC Approval: \_\_\_\_\_

# Warranty

BlueDial comes with a 1-year limited warranty. You have the option to add a 3-year extended warranty. <https://motionics.com/warranty/>

  
**Product Warranty**

Motionics, LLC warrants every device to be free of all defects in material and workmanship, for one year from date of shipment to buyer, covered through its Limited Warranty.

With the Extended Warranty, your coverage will extend to three years from original shipment date of the device and adds up to two coverages of accidental damage, each subject to a service fee<sup>1</sup> plus applicable tax. The warranty prices and service fees vary with each individual device and can be found at <https://store.motionics.com/products/extended-warranty>.

<b>Limited Warranty</b>	<input checked="" type="checkbox"/> 1-Year Warranty <sup>2</sup>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Extended Warranty</b>	<input checked="" type="checkbox"/> 3-Year Warranty + 2 Coverages of Accidental Damage <sup>3</sup>		

<sup>1</sup> Service Fees are reduced prices for repair/replacement of the device covered by the Extended Warranty.  
<sup>2</sup> Limited Warranty covers all defects in material and workmanship for free for all devices for one year from date of shipment to buyer.  
<sup>3</sup> Accidental damage coverage applies to an operational or mechanical failure caused by an accident from handling as a result of an unexpected and unintentional external event (i.e. damage caused by dropping or liquid contact from spills) that arises from the buyer's normal usage of the covered product.

# Power and Batteries

BlueDial is powered by a non-rechargeable SR44/LR44 coin battery for the dial itself and a 400mAh rechargeable battery for the transmitter.

BlueDial comes with a coin battery, as well as charging accessories for the transmitter.

Battery Life (Rechargeable): 60 hrs

Battery Life (Coin Battery): 18,000 hrs



# Software

## General-Use Software



[MultiGage iOS](#) (free)



[MultiGage Android](#) (free)



[MultiGage Windows](#) (free)

## Application-Specific Software



[Pile Load Test](#) (iPad)



[Rotor Runout](#) (iPad)

## Cloud-Based Software



[MultiGage Cloud](#) (subscription-based)

# Software: MultiGage (iOS/Android)

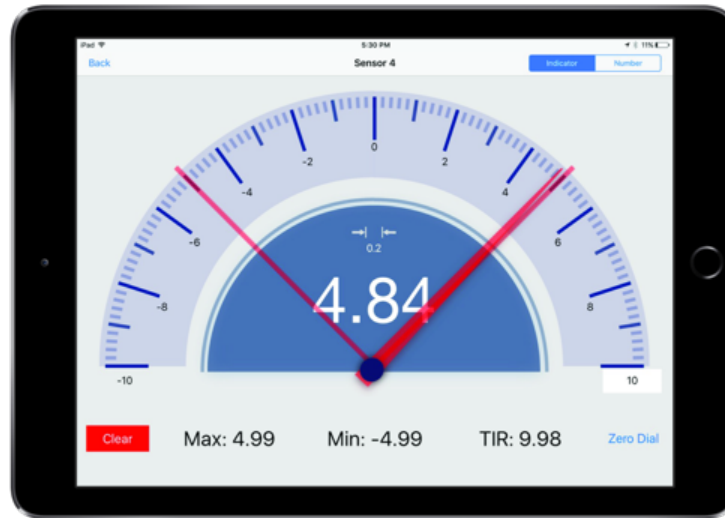
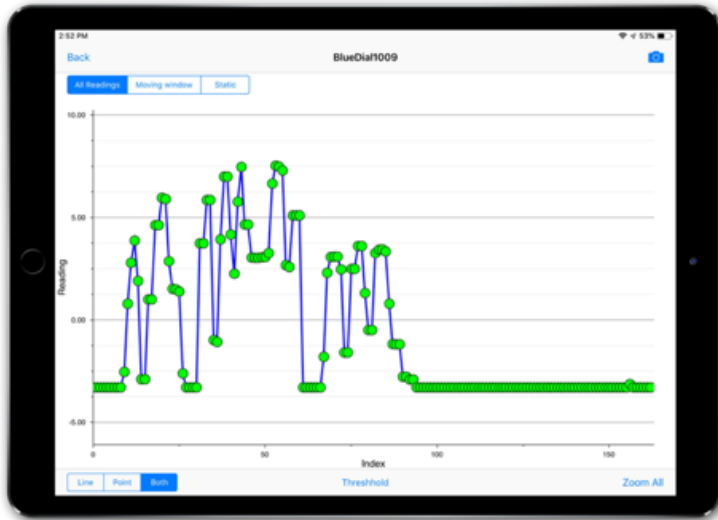
MultiGage allows the user to connect to multiple gauges and read/record measurements wirelessly on smart devices, including iPhone, iPad, and Android.



## Features:

- Simultaneous reading of multiple devices
- Data plotting
- Continuous or single data point recording
- Max, Min, TIR measurement
- Remote zeroing from the app
- GO/NG judgment with green/red color indication
- Custom formula calculator
- Large analog probe meter with adjustable range
- Data saving in local database
- Data export in CSV via email and cloud drives
- Apple Watch support

# Software: MultiGage (iOS/Android)



Record Detail screen showing a table of sensor data. The table has columns for Device, Reading#, Max, Min, TIR, Time, and Value.

Device	Reading#	Max	Min	TIR	Time	Value
BlueDial1	027	8.980	-4.720	13.700	2019-10-29 01:36:34 PM	-4.720
BlueDial3	000	9.610	-2.500	12.110	2019-10-29	---



All Readings screen showing a grid of sensor data. Each sensor entry includes a "Clear" button, a reading, and its Max, Min, and TIR values.

Sensor	Reading	Max	Min	TIR
Sensor 1	0.06 mm	4.48	-4.76	9.24
Sensor 2	-0.38 mm	4.98	-4.89	9.87
Sensor 3	-2.24 mm	4.47	-4.85	9.32
Sensor 4	-2.38 mm	4.83	-4.96	9.79
Sensor 5	1.29 mm	4.58	-4.86	9.44
Sensor 6	-2.94 mm	4.46	-4.26	8.72
Sensor 7	3.02 mm	4.68	-4.84	9.52
Sensor 8	0.85 mm	4.56	-4.87	9.43
Sensor 9	-1.35 mm	4.88	-3.79	8.67
Sensor 10	2.86 mm	4.94	-4.97	9.91
Sensor 11	-1.56 mm	4.25	-4.95	9.2
Sensor 12	0.08 mm	4.96	-4.64	9.6
Sensor 13	-0.21 mm	4.75	-4.76	9.51
Sensor 14	0.84 mm	4.71	-4.87	9.58
Sensor 15	3.37 mm	4.5	-4.14	8.64

# Quick Start iOS/Android

- Insert the coin battery into the indicator (first-time use).
- Turn on both the indicator and the transmitter.
- Run MultiGage, then tap + to enter the pairing page.
- Wait for the software to finish scanning for nearby devices, select BlueDialXXX, then hit Connect.
- Connection may take a few seconds. Once paired, BlueDial readings will show in the software.

[Click here for the online user guide](#)



# Software: MultiGage (Windows)

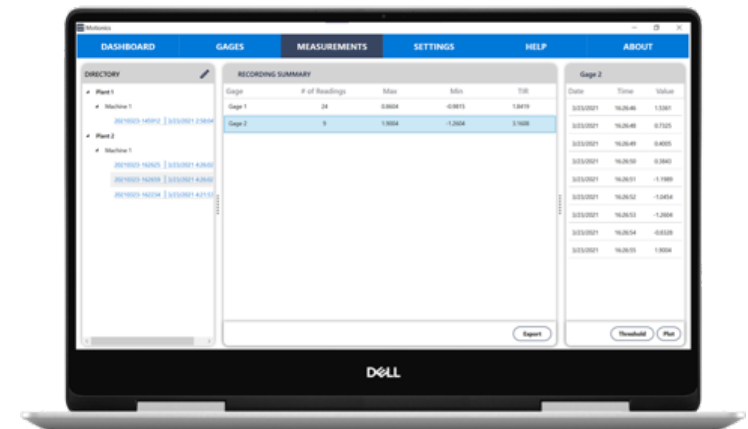
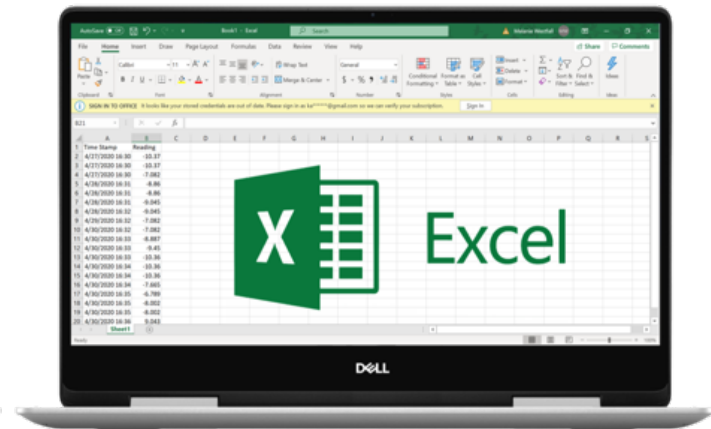
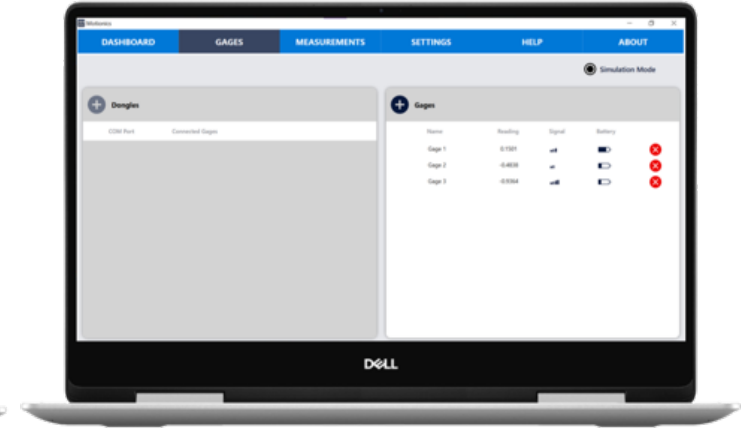
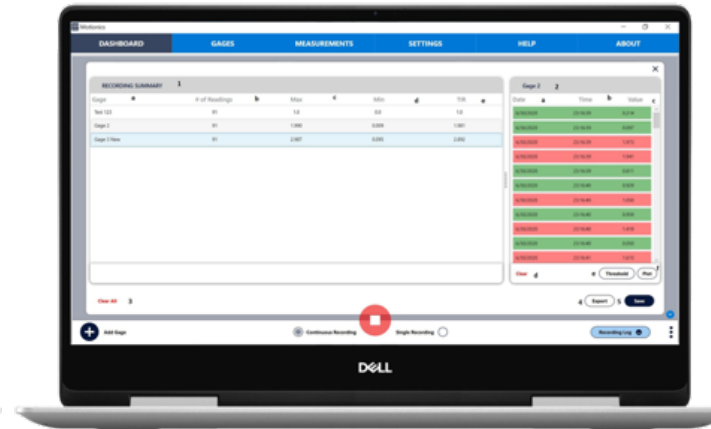
[MultiGage](#) allows the user to connect to multiple devices and read/record measurements wirelessly on Windows PC.



## Features:

- Simultaneous reading of multiple devices
- Real-time data plotting
- Continuous or single data point recording
- Max, Min, TIR measurement
- Remote zeroing from the app
- GO/NG judgment with green/red color indication
- Customizable dashboard
- Large analog probe meter with adjustable range
- Data saving in local database
- Data export as CSV
- Live keyboard data input to Excel or SPC software

# Software: MultiGage (Windows)



# Quick Start Windows

- Insert the coin battery into the indicator (first-time use).
- Turn on both the indicator and the transmitter.
- Plug the USB dongle into your PC, then run MultiGage.
- Go to the Gages tab, then click + in the Dongles panel.
- Select the dongle from the list and hit Select.
- Click Scan on the gages panel, Click BlueDial, then Connect.
- To add BlueDial to the dashboard, go to the Dashboard tab, hit +, then select BlueDial from the dropdown menu.

[Click here for the online user guide](#)

# Software: MultiGage Cloud

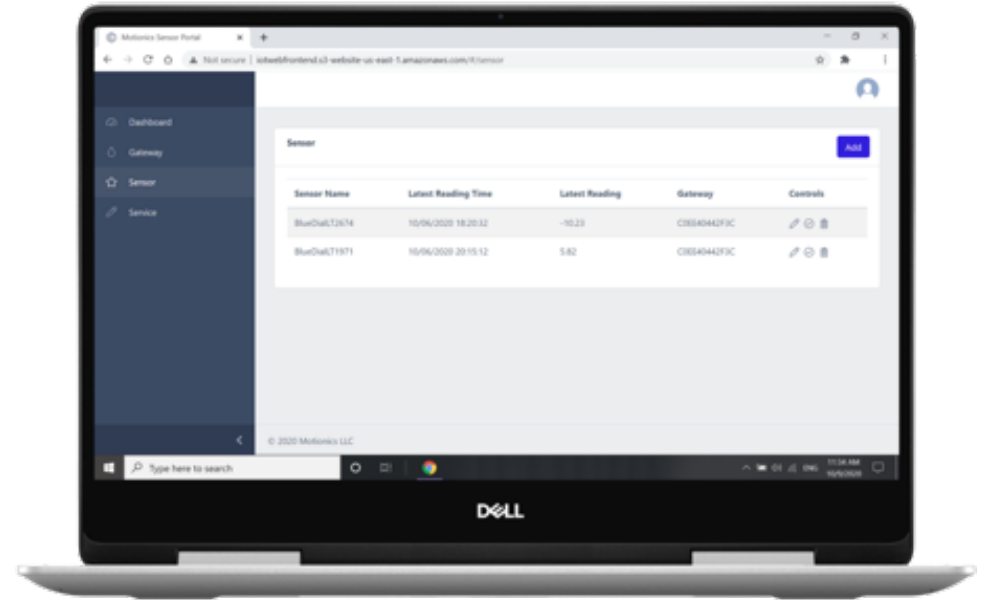
MultiGage Cloud connects different Bluetooth wireless gauges to the Internet, allowing remote real-time data monitoring from anywhere.



## Features:

- Automatic data recording
- Multi-sensor connectivity
- Data export
- Smart alerts & notifications
- Monitor assets at different locations
- Multi-user access
- Customizable display
- Database integration
- Available for any device
- Remote system updates
- Remote Sensor controls

# Software: MultiGage Cloud



# BlueDial Multiple Gauge Capability

Multiple BlueDials can be connected to the receiving device at once. The maximum number of BlueDials varies based on the receiving device:

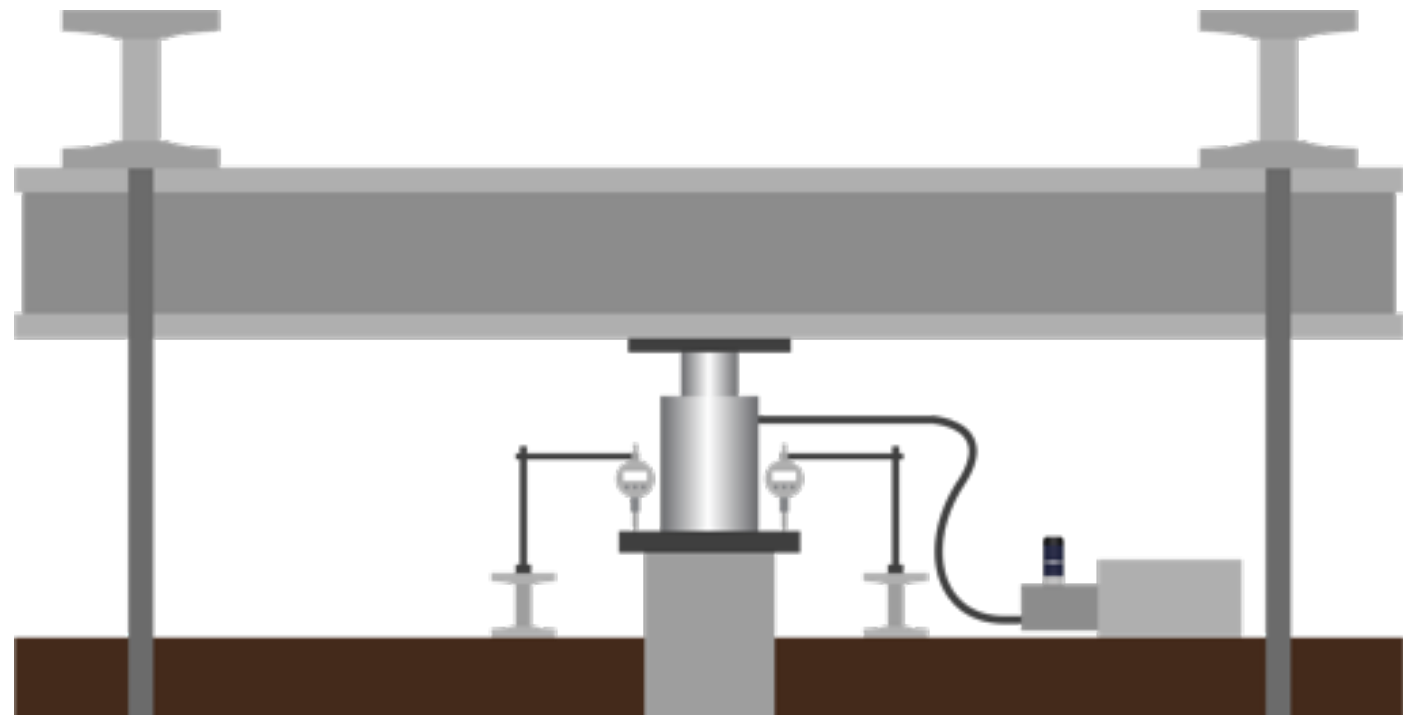
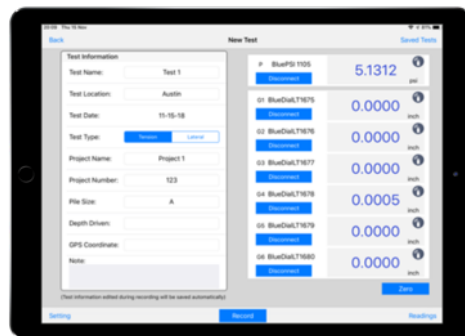
MultiGage iOS	MultiGage Android	MultiGage Windows	MultiGage Cloud
14 BlueDials	8 BlueDials	*8+ BlueDials	Unlimited BlueDials**

*\*Up to 8 BlueDials can be connected to each BLE dongle. You can use as many dongles as you need/you can install on your PC. USB hub can be used to increase the number of dongles you can connect to your PC.*

*\*\*Connection limit depends on plan.*

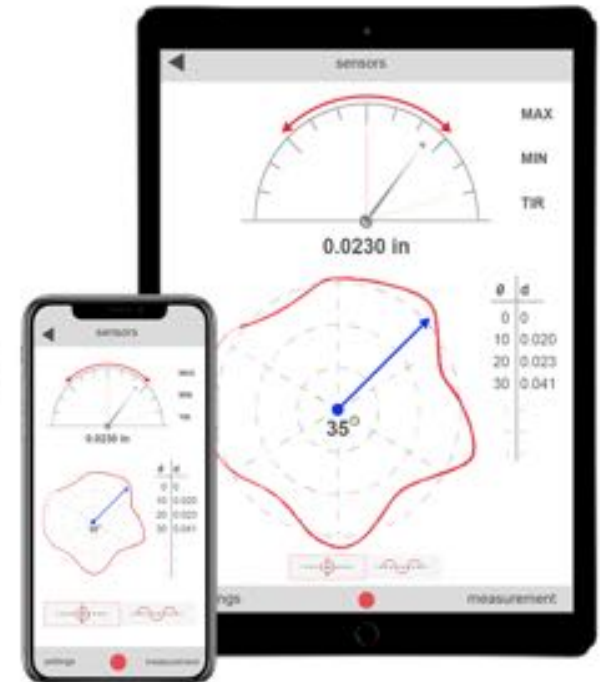
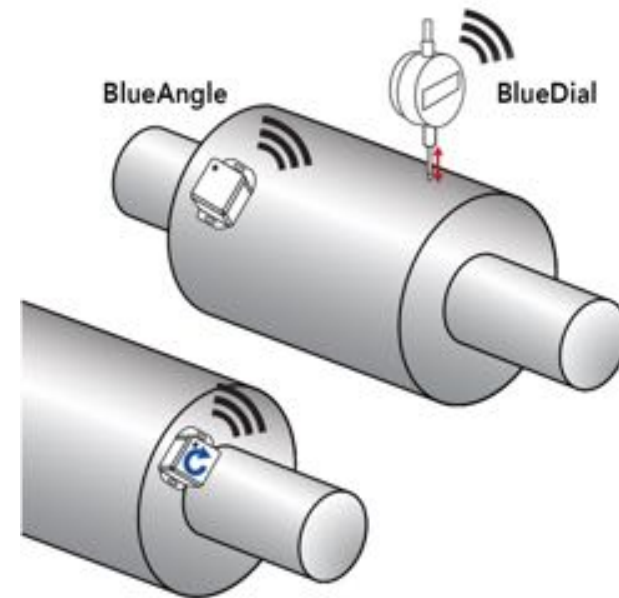
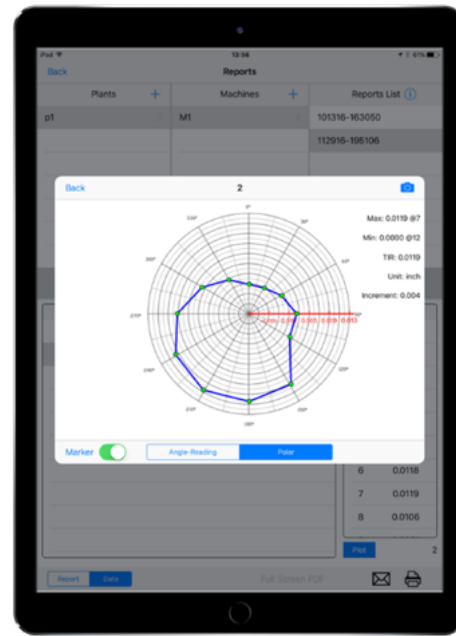
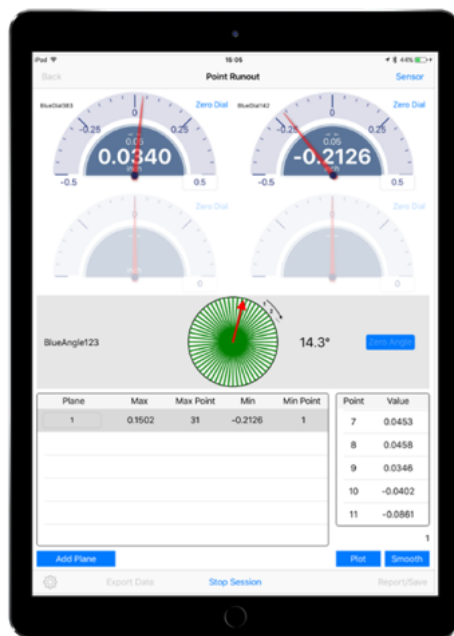
# Software: Pile Load Test

Pile Load Test is an iPad app that works with BlueDial and Wireless Load Gauges and our Bluetooth Pressure Gauge for wireless pile load and deflection testing.



# Software: Rotor Runout

[Rotor Runout](#) is an App that works with BlueDial and Motionics [BlueAngle](#) (Bluetooth angle sensor) for rotor runout testing. Both deflection and angular positions are viewed and recorded simultaneously.





# Customer service

- If you have any issues with our product, you can email us at [info@motionics.com](mailto:info@motionics.com) or give us a call at +1 (205)264-1896.
- You can also reference our tutorial videos if you're having issues with the software:  
<https://www.youtube.com/playlist?list=PLVFny1uZEebJSSFG65mTzkgbgIBGwgOIT>

# Troubleshooting

## Having trouble connecting to BlueDial?

- Make sure both the dial and the transmitter on the back of BlueDial are on (a blue light should be on).
- Make sure you are connecting/pairing to the gauge using our MultiGage app or software, not through system settings of your device.
- Wait a few seconds for BlueDial to appear on the scanning page; if you don't see it appear, you can hit refresh to scan again.
- If using Windows, make sure to connect to the dongle first, then scan for available devices under the Gages tab.

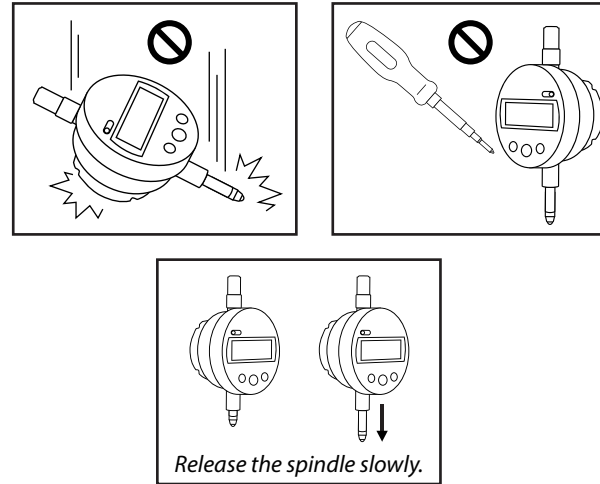
# Care Instructions

## General Care

- Turn off the device after use. It will **NOT** turn off automatically.
- Do **NOT** open the device. Opening causes permanent damage and may void the warranty.
- Do not strike BlueDial or allow it to be struck.
- Do not drop BlueDial or apply excessive force to it.
- Do not use BlueDial outside of its listed operating temperature. (0-50°C for BlueDial, 0-40°C for BlueDial-LT).
- When the spindle is fully pushed in, release it gently and slowly to its resting state. Do not release the spindle suddenly.
- Do not rotate the display unit of the indicator. This may damage the indicator.
- Do not use an electric marking pen or similar device on BlueDial. Doing so may result in damage to the instrument.
- When replacing the contact point, hold the spindle and turn the contact point. Otherwise, the indicator may be damaged.

## Battery Care

- If BlueDial will not be used for more than three months, remove the coin battery and store it separately.
- Do not use a sharp pointed tool to remove the battery holder. Doing so may result in damage to the battery holder.
- Always insert the battery correctly in regard to the polarities (+ and -) marked on the battery and the instrument.
- Keep the battery out of direct sunlight, high temperature, high humidity, and out of the reach of children.
- When discarding or storing the battery, cover the positive and negative terminals with insulating tape to prevent contact with other metals. When disposing of it, follow the regulations and ordinances of your local government.
- Do not swallow the battery. If swallowed, consult a physician immediately.



## Mounting the Dial

- If mounting BlueDial on a fixture or stand, use the stem or lug to clamp it. Avoid using using a lock screw to fix it directly.
- If the screw is tightened with a torque of 150cN·m or more, the spindle may not move.

## Long-Term Maintenance

- Keep the stem lubricated so the spindle can move smoothly.
- Clean BlueDial regularly for optimum performance. To clean the indicator, use a soft cloth soaked in a diluted neutral detergent. Do not use any organic solvent (thinner or benzene) It may deform or damage the indicator.
- A contaminated spindle may cause malfunction. Wipe it off with a cloth dampened with alcohol.
- Have your BlueDial calibrated once every 12 months for optimum accuracy and performance. You can either send it to us to be calibrated, or have it calibrated at a lab for ISO 17025 calibration.

# Customization

BlueDial can be customized to fit your application. You can add a tilt-angle sensor, adjust data rates, or anything you need to make BlueDial work for you.

You can also send us your digital dial indicators to integrate with a Bluetooth transmitter, turning your dial into a BlueDial.

We also offer software customization.

Contact us for more information: [info@motionics.com](mailto:info@motionics.com)

# Useful Links:

- FAQ: <https://motionics.com/faq/>
- BlueDial User Guide: <https://www.motionics.com/downloads/BlueDial-Manual.pdf>
- Brochure: <https://www.motionics.com/downloads/BlueDial.pdf>
- iOS/Android Software page: <https://motionics.com/product/multigage-reader/>
- Windows Software page: <https://motionics.com/product/multigage-reader-windows/>
- MultiGage Windows User Guide: <https://motionics.com/downloads/MultiGageWindows.pdf>

# Thank You!



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