



# The FARO® Gage:

A Complete Guide to the Latest in Affordable, Accurate, and Versatile 3D Measurement



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# Introduction

When it comes to taking measurements and performing inspections for industrial parts, there's no room for error.

But many businesses are stuck between using slow and inefficient manual measurement methods or expensive 3D Coordinate Measuring Machines (CMMs) that take up valuable shop space – and it's getting harder and harder to keep up with the competitors who can afford the latest solutions.

Traditional handheld tools like micrometers, calipers, and height gauges are simply not versatile enough and leave too much room for accidental human error. They are only able to measure one dimension at a time and operators often have to switch between many different tools to get the job done -- slowing them down and impacting accuracy.

Fixed CMMs and other similar tools are too expensive for most small to medium businesses and they usually need to be permanently set up in one large space. They can take up an entire room by themselves, which is space that could be used for making more parts and bringing in more revenue instead.

This leaves small and medium businesses in a difficult position. With every big order, they have to decide between, for example, taking three days to manually complete it or spending significant money on a device that could allow them to complete the task in hours.

The Gage FaroArm® meets small and medium businesses in the middle, setting a new industry standard for consistency, performance, and affordability. Versatile and user friendly, it checks all the boxes for machine shop applications with its highly accurate measurements and durable, portable design. It is also far more affordable than expensive, fixed CMMs that require extensive training, making it the perfect choice for small and medium businesses.



**The Gage FaroArm® meets small and medium businesses in the middle, setting a new industry standard for consistency, performance, and affordability.**

# This comprehensive guide will walk you through:

1. Key features of the Gage that will help you boost the accuracy, speed, and performance of your measurement processes
2. Where you can use it
3. A breakdown of the cost benefits
4. Successful use cases
5. How to determine if a portable CMM is the best solution for your challenges and applications
6. What's next if you'd like to add Gage to your current toolset



# Product Exploration:

## The Gage Sets a New Standard for Flexibility and Affordability

The Gage allows manufacturers to increase efficiency without breaking the bank, so they can deliver better quality products while significantly reducing measurement and inspection time.

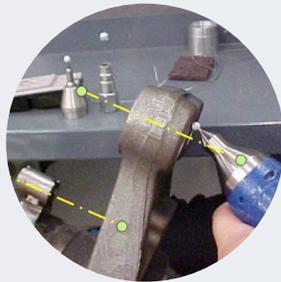
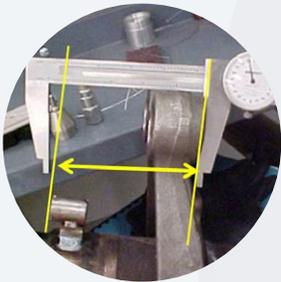
## Precision and Flexibility

With the Gage, manufacturers can achieve fixed CMM-like accuracy without the movement restrictions. Unlike stationary CMMs, the FARO Gage allows users to check parts practically anywhere in the shop. It can be mounted in a multitude of ways, including tripod mounting, vacuum mounting, and magnetic base mounting. For example, it can quickly and easily be mounted on a machine table, bed, or tool. There are no custom fixtures or multiple setups required to get started.



## GAGE vs Hand Tools: 3D Measurements

### 3D Offsets and Angles



### Irregular Shapes



## Reduce Rework and Scrap

The Gage offers unmatched, reliable performance – even in the most challenging industrial environments. Quality assurance can be performed throughout the process instead of waiting until the end, allowing users to identify issues earlier in the manufacturing process and significantly reduce rework and scrap.

The Gage also increases accuracy, especially when compared to handheld tools like calipers or height gauges. Handheld tools leave more room for human error, can cause misrepresentative measurements, and are particularly tricky to use in high or low areas. The Gage can quickly sample multiple points on a surface and then best fit them to deliver a precise representation.

## Boost Productivity and Efficiency

Many shop floors are already crowded for space. The Gage helps increase efficiency and simplify workspaces by reducing the number of tools required for a single job. Its mobile and relatively compact design helps save valuable floor space.

It also helps eliminate bottlenecks or unnecessary downtime. Critical jobs don't need to wait for the fixed CMM to be available. Instead, users can work faster and achieve more accurate measurements and inspections with the Gage.

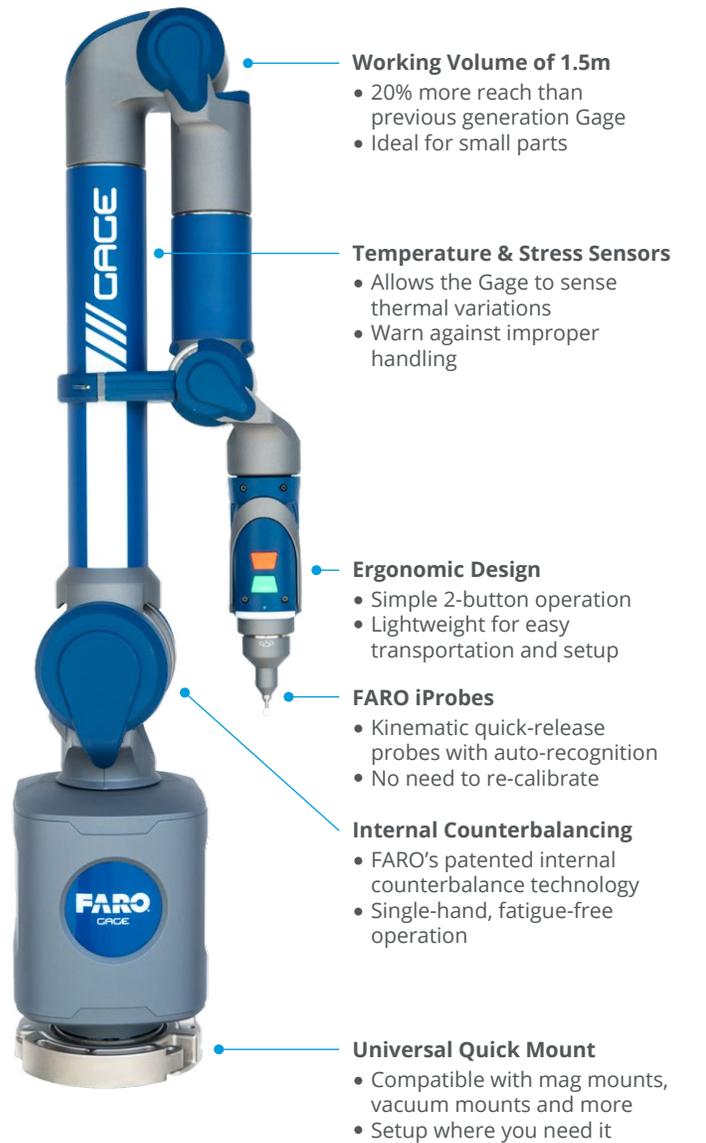
## Easy to Learn, Easy to Use

One of the biggest challenges businesses face in quality control is finding the skilled labor in their area who are available and have the technical knowledge to get the job done. Most efficient and sophisticated tools require an understanding of complex geometry and programming, and highly-trained technicians who have knowledge of those fields can be difficult to find and more expensive to employ.

The Gage has an intuitive and simple design with minimal programming, so a machinist already working in the shop will be able to master it with some quick training. Those who are already familiar with operating computer numerical control (CNC) machines can easily be trained on how to perform measurements with the Gage.

Plus, once the Gage is used to measure a part once, FARO's CAM2 software can create a program for repeat part management.

## GAGE Features



- Working Volume of 1.5m**
  - 20% more reach than previous generation Gage
  - Ideal for small parts
- Temperature & Stress Sensors**
  - Allows the Gage to sense thermal variations
  - Warn against improper handling
- Ergonomic Design**
  - Simple 2-button operation
  - Lightweight for easy transportation and setup
- FARO iProbes**
  - Kinematic quick-release probes with auto-recognition
  - No need to re-calibrate
- Internal Counterbalancing**
  - FARO's patented internal counterbalance technology
  - Single-hand, fatigue-free operation
- Universal Quick Mount**
  - Compatible with mag mounts, vacuum mounts and more
  - Setup where you need it

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- International Standard**
    - Compliance with the rigorous ISO 10360-12
  - Powerful Options**
    - Wireless connectivity
    - Extended battery operation
  - Powerful Software Options**
    - Compatible with all FaroArm software
    - Includes 1yr CAM2 Probing SaaS

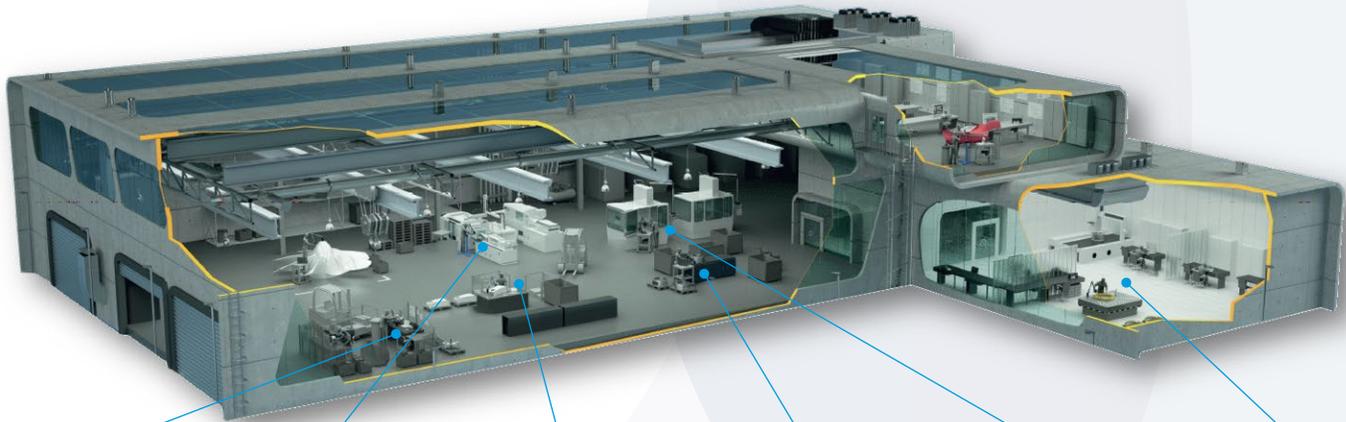
### What's New?

How does the new Gage compare to its predecessors?

- Greater accuracy with an ISO 10360-12 accuracy certification
- Smart Probes autorecognition without recalibration after probe changes allow for more efficient inspection work
- WiFi and Bluetooth options
- Works with all FaroArm-compatible software

# Applications:

## Where to Use the Gage



First Article Inspection



Troubleshooting



CAD to PART Inspection



Dimensional Analysis



On-Machine Verification



Statistical Process Control

## Popular in Metal Manufacturing

- Machine Shops
- Tool and Die Makers
- Stamping
- Cutting
- CNC
- Contract Part Manufacturing

## Compatibility

The Gage Arm works with all Quantum series compatible accessories, including the Granite Cart, Magnetic Mount, Vacuum Mount, 8-Axis, Touch Probe, and Tripods.

# ROI:

## How Does the Gage Pay for Itself?

**The Gage pays for itself in just 5 months - sometimes even less!**

**Even a small amount of machine tool downtime adds up fast.**

If the average machine time cost is \$125 USD/hour, just 1.5 hours of daily machine tool downtime adds up to **\$3,750 every month in lost revenue.**

And that's just from machine downtime. When other variables such as overtime, scrap, rework, delivery time, and customer satisfaction are considered, the ROI will yield further savings.

The Gage is an affordable solution that allows businesses of all sizes to utilize 3D measurement technology to simplify processes and significantly cut back on unnecessary downtime.

Instead of having multiple people working on completing manual measurements on the same part, a single person can complete all of them with the Gage. This reduces overtime costs across the board and leaves other employees free to work elsewhere within the shop.



**The Gage pays for itself in just 5 months - sometimes even less.**



With a mobile, precise tool, users can **prevent parts removal and repeat setups** that prolong the process. It is **straightforward to use and easy to learn**, so businesses don't have to spend time and resources finding highly qualified technicians or conducting extensive training for current staff.

It allows users to **catch defects sooner** along in the process and deliver parts much faster – helping smaller businesses avoid having to put in long hours to keep up with demand or risk falling behind the competition.

The Gage also **automates reporting**, so users don't have to lose valuable time transferring handwritten measurements into the computer system. Instead, data is automatically fed into the computer throughout the process and is finalized in a report at the push of a button for fast, flexible exporting. If needed, the shop can maintain permanent digital records of all inspection reports.

# The Gage in Action

Businesses around the globe have already started implementing the Gage into their operations and have been impressed by its ability to upgrade the speed and accuracy of measurements and inspections.

**McNally Industries in Grantsburg, Wisconsin serves one of the world's largest prime contractors for the defense and aerospace industries, providing full military systems along with complex, precision-machined components for critical defense and aerospace applications.**

It was a challenge to maintain their QRM goals due to the diversity of parts they manufactured, which ranged from 0.5" to 45" in size. They needed something that would allow them to achieve precise measurements quickly, so they decided to implement the Gage.

Thanks to the Gage, they were able to significantly reduce inspection times and operator error, and further increase efficiency with computer-generated inspection reports for customers.

"On one job alone, we saved in excess of 40 man hours using the Gage. I would guess there have been at least five projects with similar results." - Dean Josephson, Director of Quality Assurance.

**The Gage was also adopted by Ansko Machine Company in Cuyahoga Falls, Ohio, a full-service contract shop that specializes in CNC milling and turning.** They had taken on a challenging project machining a cast iron housing weighing roughly 750 lbs. It required a 100 percent inspection and full documentation on all 80 critical features, which would be impractical and time-consuming to complete with handheld methods, but the housing was too large and cumbersome to be accurately inspected by their traditional bridge-type CMM.

With the Gage, they were able to set the part up on the table, check out all of the required features, and return it to the skid in under twenty minutes - **an 80 percent reduction in standard work time.**



# Is the Gage the right fit for your business?

Are you still on the fence? Go through this quick checklist to determine if implementing the Gage is the most efficient, cost effective choice for your unique business.

**Give yourself a point for each line that applies to you and add up your score at the end to find out your result.**



- Do you ever build or measure parts that are smaller than a bicycle?
- Do you wish you could measure parts while they are still on the machine or still in the production line?
- Are you often juggling multiple tools to complete a single measurement or inspection?
- Do you or other team members often have to wait your turn to use the specialized measurement tools in the shop?
- Do you supply precision parts to big customers with a lot of demand?
- Do you find it difficult to find skilled technicians with the necessary expertise and training to perform detailed 3D measurements?
- Have you ever missed a delivery deadline or had to tell a client you did not have the necessary inspection tools to complete a request?
- Do you ever need to provide detailed inspection reports?
- Are you struggling with inconsistency in measurements from one operator to another?
- Are you limited by your current methods but feel that an upgrade to something like a fixed CMM is financially out of reach?

**If you checked two or more of these boxes, it's time to upgrade to the FARO Gage.** Your applications require a level of precision, efficiency, and versatility that are not being met by your current methods. The more boxes you checked, the more you may need the Gage. The Gage is an affordable solution that will allow you to transform your processes, improve productivity, and reduce rework and scrap.

# The Most Affordable, Versatile Solution for Small to Medium Businesses

Find out more about how the FARO GAGE can help you stay one step ahead of the competition with greater flexibility, precision, and productivity. Schedule a free demonstration to experience its capabilities firsthand, so you can decide if it is the best fit for your shop.

[Watch 5-Minute Demo](#)

Visit [faro.com/gage](https://www.faro.com/gage) to learn more.

Or call us toll free at local offices in over 25 countries around the world.



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