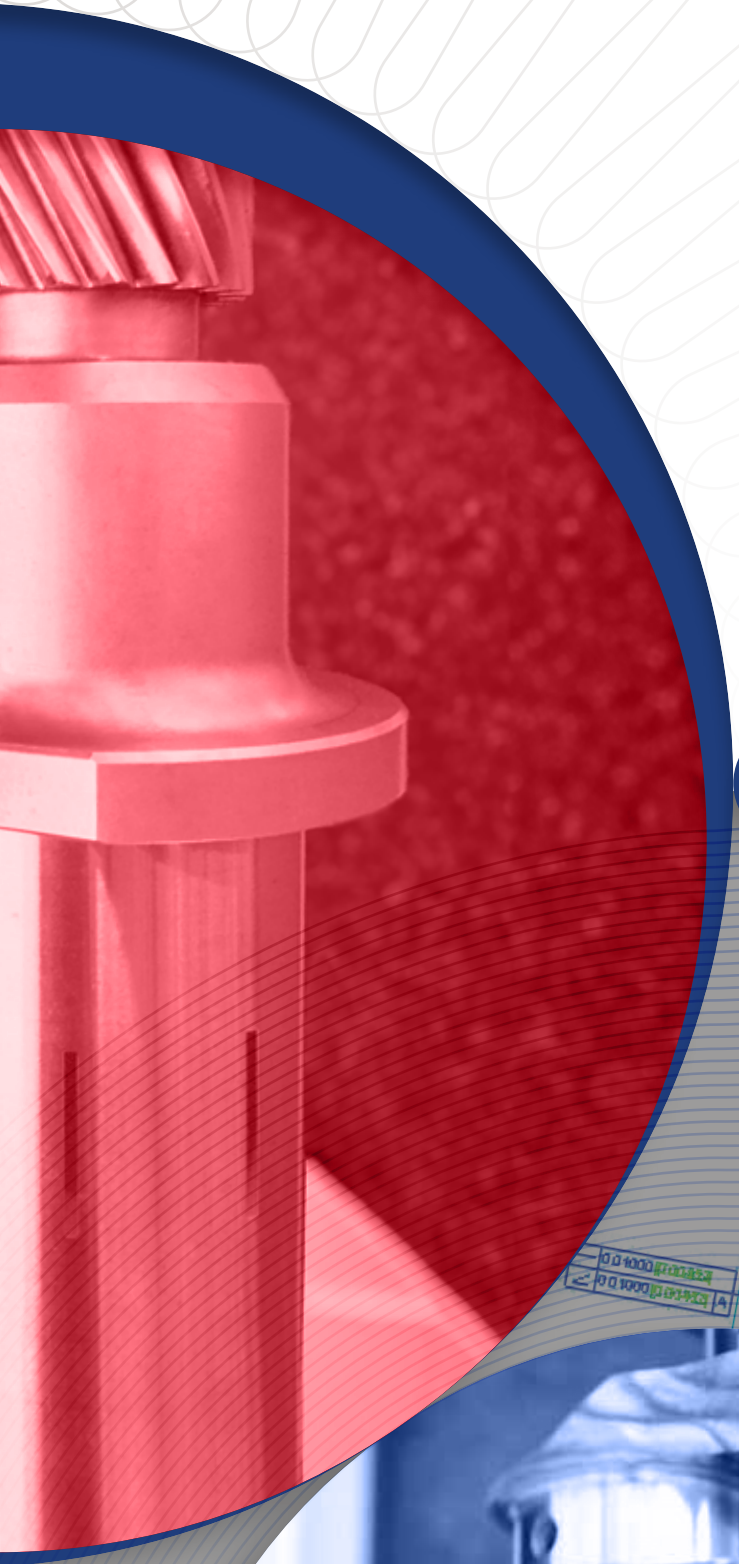
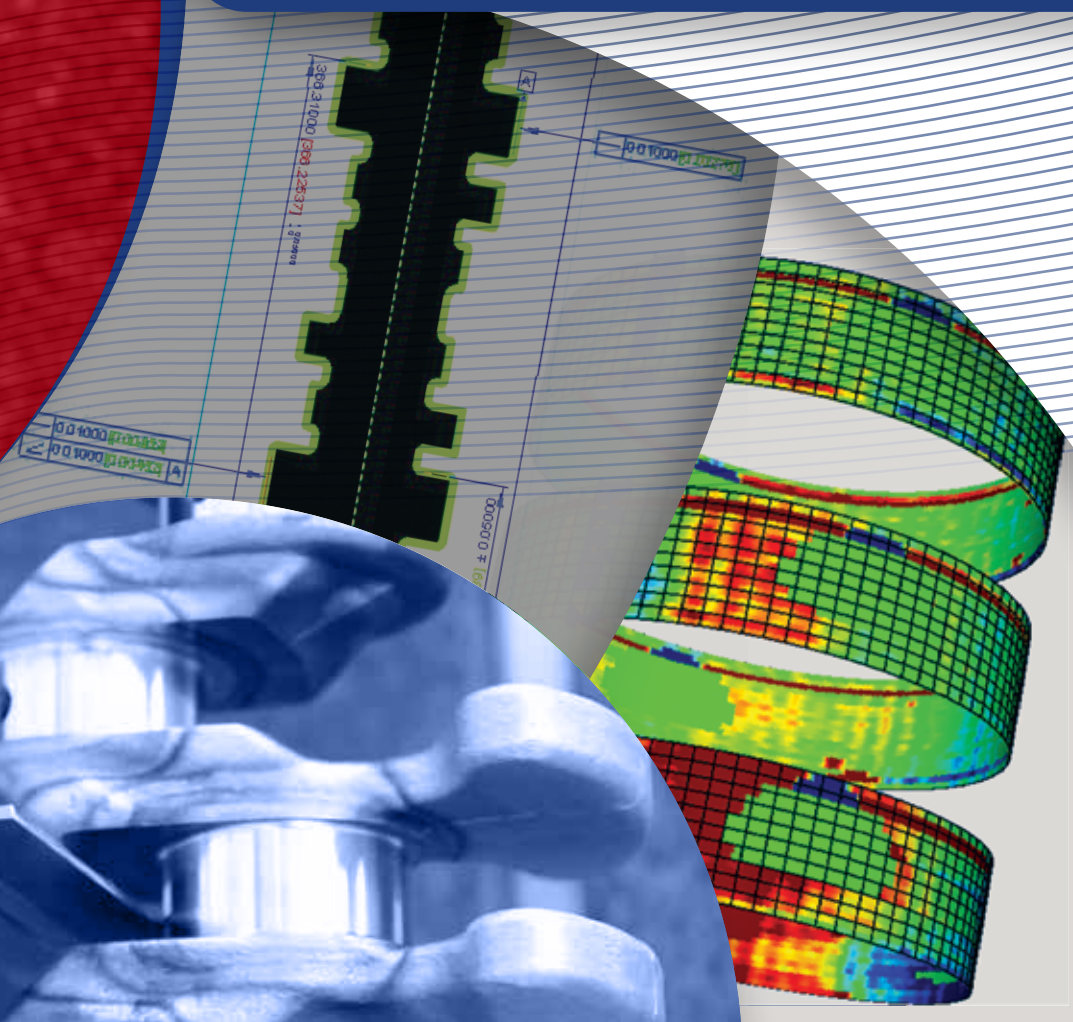
ADCOLE

TRUSTED ACCURACY

Industrial Shaft Metrology Solutions



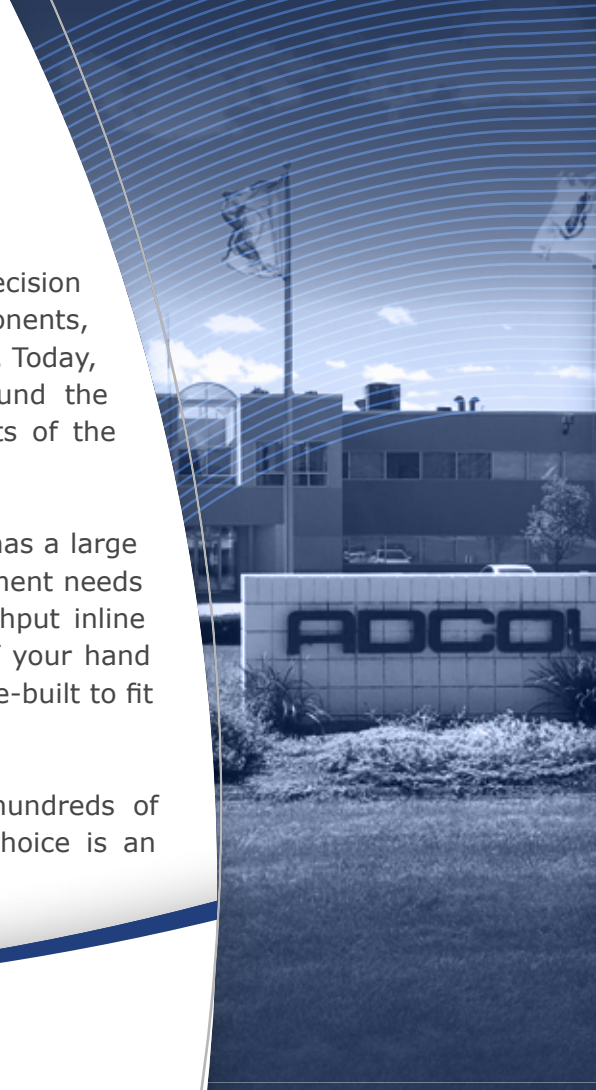


Trusted Accuracy, Absolute Quality

Adcole is the original pioneer of automated gaging solutions for precision measurements of cylindrical and eccentric shafts and other components, setting the standard for accuracy, reliability, and durability since 1968. Today, leading automotive, industrial, and technology manufacturers around the world use Adcole Gages to meet the most demanding requirements of the latest generation of high-performance mechanics.

With over 50 years of proven industrial metrology expertise, Adcole has a large suite of products that will meet the most demanding GD&T measurement needs used in both audit measuring room settings as well as high throughput inline production. Capable of measuring small parts that fit in the palm of your hand up to large shafts over 4.5 meters in length, our solutions are purpose-built to fit your specific needs.

Adcole Gages are used in a large variety of markets spanning hundreds of applications. Where quality and accuracy is imperative, the only choice is an Adcole Gage.



A Brief History

In 1957, Addison D. Cole proceeded with the founding of Adcole Corporation, now Adcole LLC, a business set to become a revolutionary industrial technology manufacturer within the automotive and space exploration industry.

During the early years of the space race, Mr. Cole recognized the need for accurate orientation of spacecraft and satellites in orbit. With this need in mind, Adcole developed sun-angle sensors capable of precisely recording the location of a craft in orbit based on its position relative to the sun. Following a chance meeting in the 1960's with a powertrain engineer from International Harvester Company, now Navistar, Mr. Cole envisioned how Adcole's calibration techniques for their fine angle sun senors could be applied to precision metrology systems for camshaft production. With this "eureka" moment, Adcole became the first company in the world to manufacture automated shaft metrology systems whose accuracy, precision, and durability have set a standard of excellence that has yet to be eclipsed to this day.

With Adcole's major product lines established, it became clear to the broader industrial technology community, that under the leadership of Mr. Cole, this was to be a business dedicated to solving complex problems in both space and here on earth, pushing the boundaries of precision, accuracy, and quality, and forever to be recognized as the leader in TRUSTED ACCURACY systems.

Our Process

MORE THAN A MACHINE

Adcole believes that a metrology solution should be the end result of a journey and relationship between us and our customers and that one size does not always fit all. That is why when you work with Adcole, our team of engineers, with over 100 years of combined experience, are prepared to consult with you towards achieving the measurement of each and every parameter you require. We place the quality of your final products in our hands.

1

CONSULT

We begin with the understanding of your objectives by gaining insight from you to generate a detailed picture of your unique requirements of every component and feature. Leaving no stone unturned, we welcome the challenge to explore solutions for all your needs.

2

CUSTOMIZE

Our mechanical, electrical, and software engineers break down, one-by-one, every technical requirement and uncover the preferences and challenges towards meeting your goals. We will provide you a proposal with a comprehensive analysis to determine the best and most accurate solutions.

3

DELIVER

You receive a fully tested Adcole Gage that meets or exceeds your needs by providing you with a gaging solution that is ***unmatched in the metrology industry,*** and backed by a comprehensive warranty. Our team of skilled field service engineers will install your gage on site, fully test it to ensure it meets your requirements, and train your staff on how to run and maintain it. Your new gage allows you to take quick, decisive actions that can reduce waste, increase productivity, and provide the highest quality and value for your end product.

Gages - Tactile

THE ULTIMATE IN ACCURACY & PRECISION

“You can’t make something better than you can measure it.”

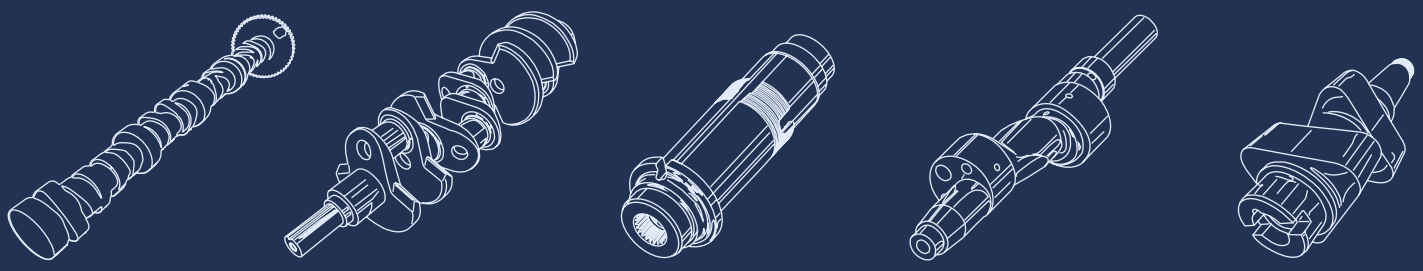
Adcole Cylindrical Coordinate Measurement Machines are manufactured to the highest accuracy in the industry for measuring tight part tolerances on cylindrical/ rotating components that are used in various industries such as automotive (EV and ICE), marine, aerospace, mining, robotics, heavy diesel, trucking, and more.

Adcole gages are just as comfortable in production lines for 100% in-line inspection as they are in the measurement room for comprehensive audit sampling applications. Often considered the “gage of record” for shaft manufacturers, measurement results can be fed back directly to your grinders for precise and real-time process control. Our decades of expertise in industrial metrology makes us a trusted solution provider for companies seeking accurate, reliable and repeatable measurement systems.

Our tactile gages:

- Reduce labor and material costs with superior gage accuracy and reliability
- Provide radial accuracy down to ±0.20µm
- Offer fast cycle times and rapid part evaluation
- Provide numerical and graphical representation of complex metrology data through Adcole software
- Measure dozens of parameters of your application
- Built on a granite base for resistance to vibration and temperature swings in manufacturing environments

Components Measured



Camshafts | Crankshafts | EV Shafts | Eccentric Shafts | Pump Shaft

1200 Series Unrivaled Performance

The flagship 1200 series gages make use of a laser interferometer for the ultimate in radial and linear measurement precision with sub-micron accuracies down to 0.25 µm. Three options are available including the more modern "LX" series, the high capacity "HC" series for extra-large parts, and the dual-head "DH" series for faster throughput requirements.

Models include: 1200-LX | 1200-HC | 1200-DH

1100 Series High Performance

Engineered to provide advanced manufacturers with an accurate, reliable and value-driven gage for production floor or metrology laboratory use, the 1100 series gages have an increased follower travel distance for parts with large eccentrics, or throws, such as crankshafts. You can choose either the modern "GX" series, or the "S" series depending on your application and budget requirements.

Models include: 1100-S (1M &1.5M) | 1100-GX (1M &1.5M)

911 Flexible Metrology Gage

Often recognized as the "gage of record" for the past 50+ years, the Adcole Model 911 helps organizations improve part quality, reduce scrap, and increase manufacturing efficiency. The 911 is Adcole's most versatile gage for smaller diameter parts with length capacity options reaching over 2.6 meters (105").

Models include: 911-24 | 911-36 | 911-60 | 911-90 | 911-105

1300 Series Multi-Head & High Throughput

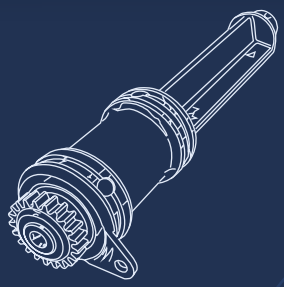
Adcole horizontal series provides a high-throughput measurement solution by adding multiple measuring heads from 2 to over 2 dozen, depending on your application needs. These gages offer fully automated, real-time monitoring and are designed to allow robot or gantry loading.

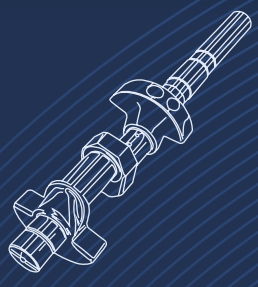
Models include: 1302 | 1304/1306 | 1310 | 1310-S

1000 Series Surface Roughness

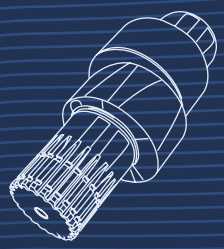
Save time, reduce costs, and get repeatable results with Adcole's automated surface roughness gages. Available with tactile Taylor Hobson probes and an option to add a Zygo ZeGage™ for 3D optical profile measurements.

Models include: 1000 | 1000-Z


Balance Shafts


Compressor Shafts


Transmission Shafts


Robotic RV Shafts

Gages - Optical

HIGH SPEED & FLEXIBILITY AT A LOWER COST

Adcole OptiShaft systems are precision optical shaft measuring gages designed for shop floor environments. Rugged and reliable, OptiShaft systems use a completely telecentric, large field of view optical system that measures, within seconds, parts with diameters up to 135mm and lengths up to 1200mm, depending on the model.

With the Optishaft series gages we maintain a high level of accuracy and repeatability that compliments Adcole's tactile gage offerings. When speed and the ability to quickly measure smaller features on a limited budget are a priority, the OptiShaft may be the gage for you. Whether for rough-end process control or end-of-line measurements, these advanced optical gages will meet the requirements of even the most demanding manufacturing applications.

Models include: S60, S100, and S135 for 60mm, 100mm, and 135mm FOV respectively.

Our OptiShaft gages:

- Offer fast shaft measurement using high-speed axial and rotational optical measurements
- Use intuitive software that enables fast learning for operators and easy programming
- Provide accurate measurements through sub-pixel edge-detection technology
- Reduce distortion to provide superior image quality with Collimated LED Illumination
- Use rigid granite base support on S100 and S135 models to isolate vibration

The Best Solution for You

Your choice between a tactile or an optical gage is focused around your application and production requirements. Adcole may recommend a tactile gage for higher accuracy or an optical gage when speed and cost are of higher consideration. Our comprehensive consultation process will guide you to the best possible gaging solution for achieving your shaft metrology goals.

Parameters Measured

Adcole gages can assess a large array of parameters such as angularity, lobe lift error, center deviation, concentricity, diameter, length, parallelism, profile, roundness, runout, straightness, taper, surface roughness and more.

Software

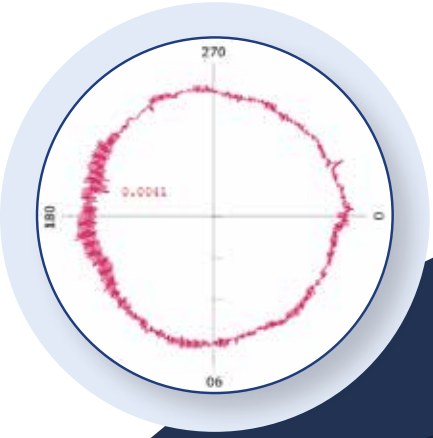
PUT YOUR DATA TO WORK

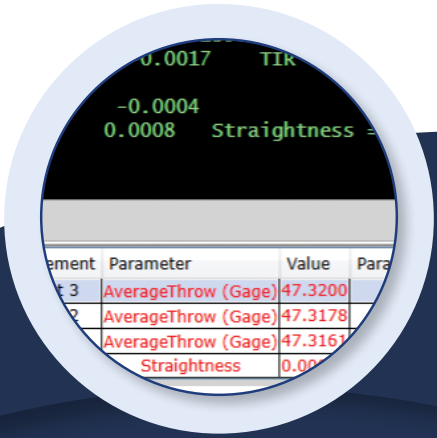
Adcole's decades of software development dedicated to shaft metrology leads to improved product quality, reduced waste, and gets you to market faster. Application-specific software is essential to ensure strict specifications and tolerances are met for shaft quality control. The ability to handle complex data and provide real-time feedback to detect any deviation from the norm, saving valuable resources, are the hallmarks of Adcole's proprietary software. The complexities of manufacturing processes will continue to grow, solidifying Adcole's software's role as a critical tool in the future.

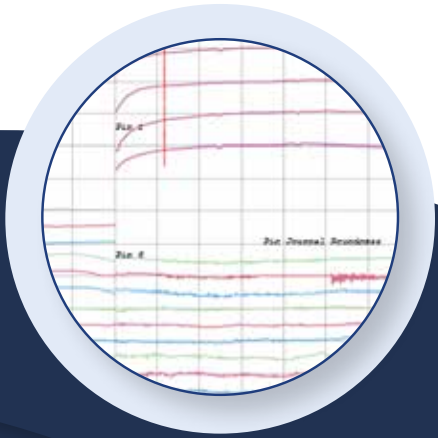
Our gages are further enhanced by the Adcole exclusive NextGen software with Program Builder. The NextGen UI is a powerful software solution for productivity and reporting that simplifies gage operation, part measurement and output analysis. Program Builder increases your throughput, saves you time and money by improving your quality inspection process and easily integrates new features/measurements using a versatile software structure.

Available Software

- 3D Inspection
- Advanced Straightness
- Asperity Removal
- ErrTran
- Linear Profile Measurement
- Material Build-Up
- NextGen User Interface
- Program Builder
- Real-time FFT Chatter Analysis
- Surface Roughness Measurement & Analysis







Global Coverage

Ensuring the success of our global customers with knowledgeable and responsive support is a top priority. That's why leading organizations and corporations around the world rely upon Adcole to deliver the highest quality products with TRUSTED ACCURACY.

Our support team is comprised of expert field service engineers who are located strategically around the world and backed by Adcole's in-house engineering, R&D, and sales team of industry experts in the USA, Germany, China, and Japan. Together, we are committed to delivering prompt and knowledgeable service to address the most difficult challenges.

- Machine installation, repair and replacement parts
- Machine operation training and troubleshooting
- Gage certification
- Prepare measurement sequences and measure prototype parts

Your Quality Starts with an Adcole Gage

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