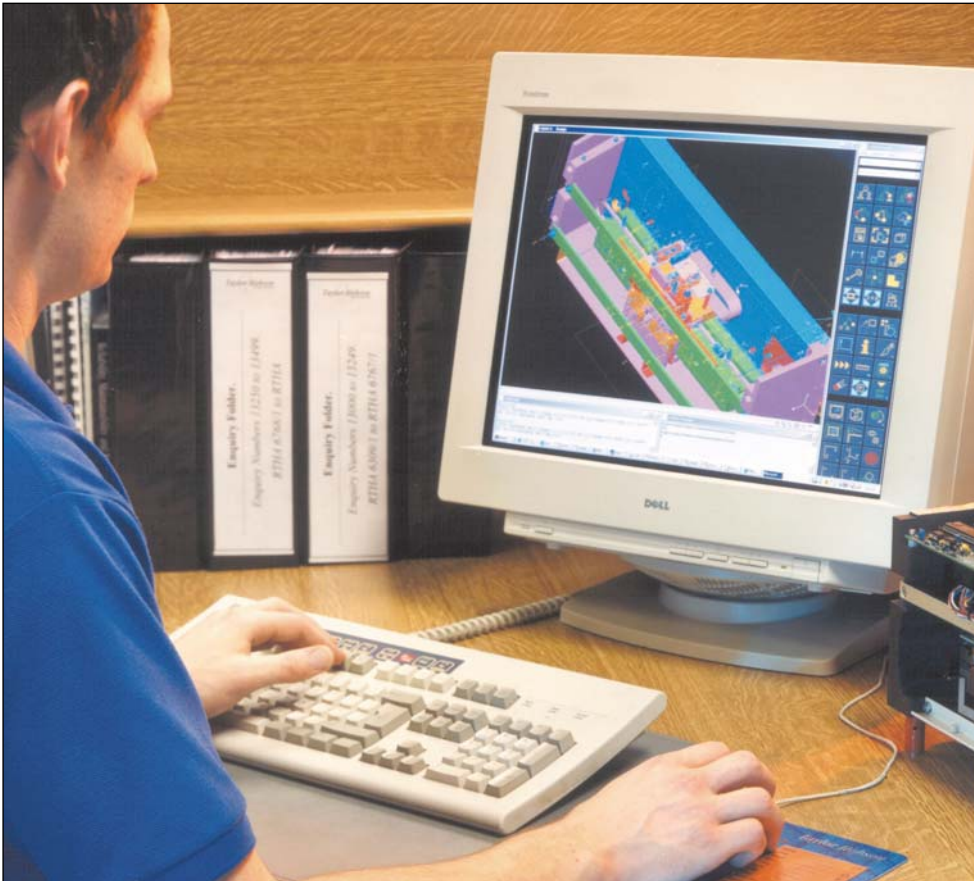


# Ultra Precision Design Engineering

Prototypes  
Fixturing  
Production



Design and build  
services for special  
applications

Industry sectors include:

- Automotive
- Aerospace
- Medical
- Defense
- Electronics
- Semiconductor
- Nanotechnology
- Precision bearings

Engineered solutions for complex inspection problems

*Taylor/Hobson*  
PRECISION

## Our background

Taylor Hobson is the definitive name for roundness, surface finish, form and inspection equipment. Our reputation for high precision and excellence is built on over 100 years of engineering integrity and innovation.

## Our global presence

We understand the different needs of manufacturers all around the world. Our business has grown into a leading global operation because we consistently deliver the right solutions to our customers. With subsidiaries and local agents in over 50 countries, Taylor Hobson provides international support.

## Our commitment

Our team of engineers, physicists and mathematicians has developed, highly successful special purpose metrology equipment for a wide range of industries and research institutions. We will always invest in people of the highest caliber to ensure that Taylor Hobson remains the first name in metrology,

## Taylor Hobson Accreditations

ISO9001:2000

ISO14001

ISO17025



*Taylor Hobson*  
PRECISION

## Ultra precision mechanical design principles

The theory and practical application of ultra precision mechanical design principles ensures that Taylor Hobson products have the most accurate, stable and repeatable mechanical platforms in the metrology industry. As a result, laboratory performance is possible from instruments used in production areas.

### Technology at a glance

Stable structures

Kinematic / semi kinematic design principles

Isolation from environment

Abbe principle optimization

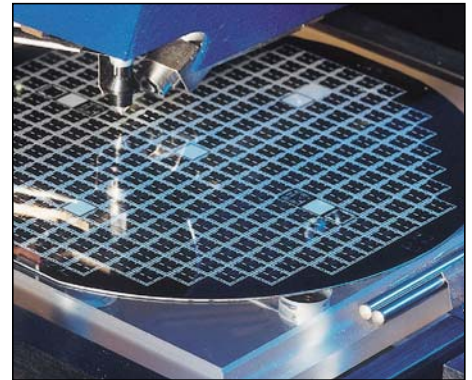
Selection of suitable materials

Non influencing mechanical drives

Minimization of thermal effects

Use of "direct" displacement transducers

Isolation of metrology system from system forces



selection of suitable materials

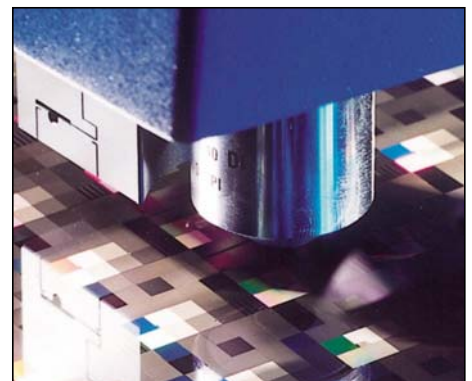


stable structures combine stiffness and precision

## Ultra precision gauging

Taylor Hobson engineers routinely push the envelope of what is possible. Our industry leading gauge heads deliver to you the highest levels of accuracy and precision along with unparalleled range to resolution which is a true measure of excellence for any gauging device.

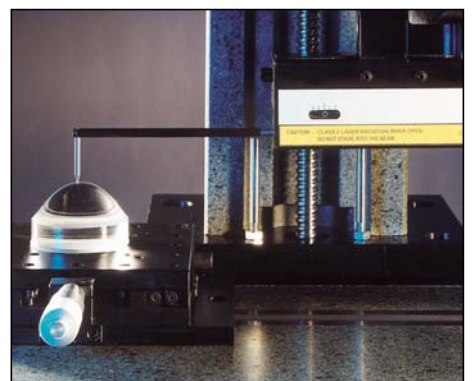
Whether used in a standard product or incorporated into a custom design, our gauge heads will vastly improve the level of precision in your inspection process.



white light interferometer

### Technology at a glance

Gauge type	Maximum range	Maximum resolution
Inductive	1mm	12nm
Phase grating Interferometer	12.5mm	0.8nm
White light Interferometer	100µm	0.01nm



phase grating interferometer

## Application of the latest software techniques

We are totally committed to keeping up to date with the latest developments using Microsoft's .NET Framework. Components are created using Microsoft Visual C++ and C# programming languages. They are then deployed using COM and .NET assembly technology which allows customization of applications via built-in VSA scripting engine.

### Technology at a glance

Iterative Agile Process  
(eXtreme Programming)

ISO 9001 coding standards /  
process / guidelines

UML Modeling

Design Patterns

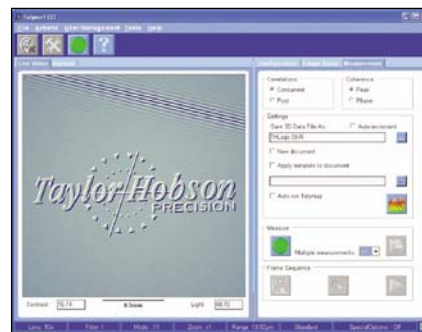
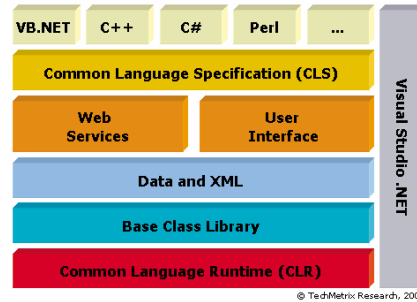
Refactoring

.NET Framework

VSA / VBA scripting engine  
built-in to applications

COM

Automated Test /  
Continuous Integration



Talysurf CCI 3000 software

## Ultra precision axis control

Accurate control of position, distance and measuring speed is essential for stable and repeatable results. The Taylor Hobson engineers have perfected platforms for ultra precision axis control.

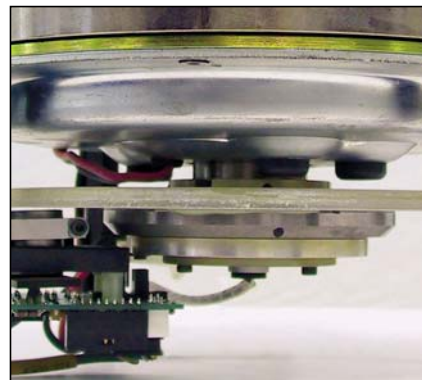
Not just for single trace data logging, but also for complex, multi-axis, geometrical relationships between component features. The expertise we build into our standard instruments is immediately transferrable to our custom engineered systems.

### Technology at a glance

Positional transducer	Positional resolution	Positional control
Linear diffraction grating	8.6nm	0.2µm
Linear reflective metal grating	0.1µm	5µm
Rotary reflective glass grating	0.025°	0.2°



linear reflective metal grating (vertical axis)



rotary reflective glass grating (spindle axis)

## We provide solutions

Our strategy for success is simple, instead of just selling products, we provide solutions. Whatever your measuring needs, Taylor Hobson can design a system to meet them.

We have the resources, as one of the world's leading manufacturers of metrology equipment, to plan and methodically execute the solution to your unique inspection problem.

### • We listen while you talk

We take our time to work with you to make sure that we totally understand your needs before proposing a system that meets both your measurement criteria and your budget expectations.

### • We build to your specification

We design and manufacture the system to your requirements, either developing entirely new equipment or, where possible, securing the cost advantages of adapting standard Taylor Hobson products. Either way, the system will be built to your specification.

### • We deliver to your timescales

We take full responsibility for ensuring the system is on-site and operational on time. Our service engineers install and commission the system. We then work with you on a full program of testing to ensure that the system meets all of its functional specifications.

### • We offer you independence

We fully train your own staff in the operation and maintenance of the system to ensure confident and competent ownership.

### • We ensure your peace of mind

Throughout the working life of your system, we will provide a full after-sales service to ensure that the equipment retains its original accuracy and efficiency.

## Contracted Services from Taylor Hobson

- **Design engineering**  
special purpose metrology systems for demanding applications
- **Inspection services**  
measurement of your production parts by skilled technicians using industry leading instruments in accord with ISO standards
- **Metrology training**  
practical, hands-on training courses for roundness and surface finish conducted by experienced metrologists
- **Preventative maintenance**  
protect your metrology investment with a Talycare service cover plan
- **Operator training**  
on-site instruction will lead to greater proficiency and higher productivity
- **Precision manufacturing**  
contract machining services for high precision applications and industries
- **UKAS Calibration**  
certification for artifacts or instruments in our laboratory or at customer's site

### Taylor Hobson Limited

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2 New Star Road  
Leicester, LE4 9JQ

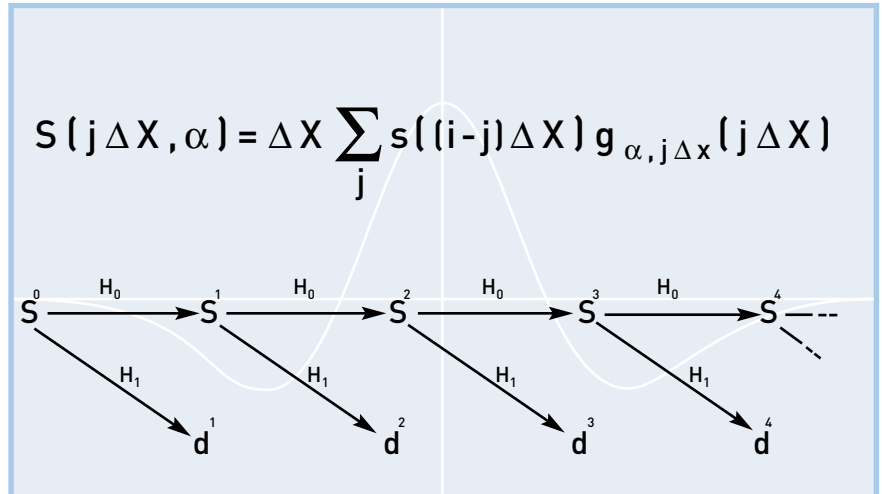
Tel: +44 116 246 3771  
Fax: +44 116 246 0579  
Email: sales@taylor-hobson.com

www.taylor-hobson.com



## Mathematical algorithm and metrology theory

Taylor Hobson's metrology analysis capability is recognized as the bench mark to which our competitors aspire. This is exemplified by both Taylor Hobson's patented instrument auto-calibration routine and our leading role within the development of ISO metrology standards.



wavelet transform



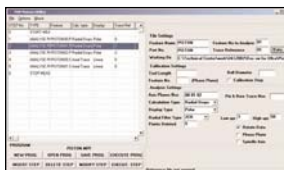
### Large displacement profile instrument

- Kinematic / semi kinematic design principles
- Isolation from environment
- Abbe principle optimization
- Laser interferometer
- Use of direct displacement transducer



### Diamond turning cell

- Kinematic / semi kinematic design principles
- Isolation from environment
- Abbe principle optimization
- Stable structures
- Linear diffractive gratings



### Software utilities

- ISO9001 coding standards / process / guidelines
- .NET Framework
- Automated Test / Continuous Integration
- C# programming language
- VSA / VBA scripting engine built into applications

