

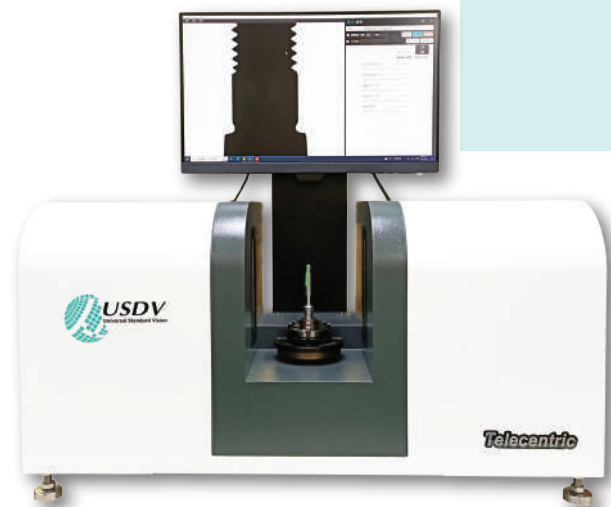
# Expert in Thread Measurement TIMI Optical Measuring Machine

Profession · Precision · Efficiency



# TIMI Optical Measuring Machine for Thread

The TIMI system integrates hardware and advanced software technology to swiftly and precisely measure the physical dimensions of different screws and tools. It is a professional solution, especially suitable for thread measurements such as pitch diameter, screw concentricity, punch, plug gauge, and specialized threads like trilobular screws.



## Scope of Applications

- The full-dimension measurement of screws and tools below 40mm in diameter.
- Replace traditional gauge like ring gauge, three-wire gauge, caliper, and projector.
- Suitable for in-line sampling inspection or mass inspection in the shop floor.

## Applicable to the following screws and tools



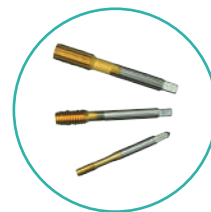
Aerospace



Automotive



Construction/Furniture



Screw Tap



Punch



Track Bolt



Electronics/Trilobular Screws



Plug Gauge

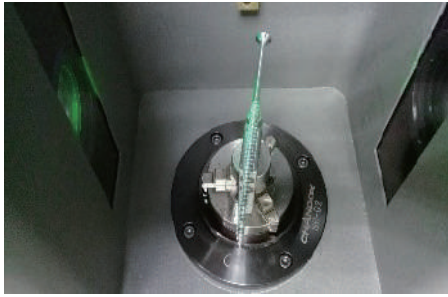


Medical Screw



Screw Rod

# Features

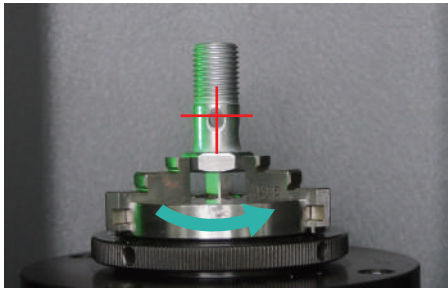


Horizontal

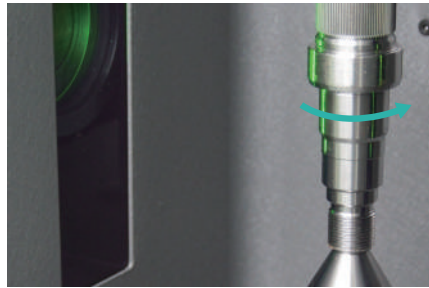


Vertical

**Open • Flexible**  
Parts can be measured vertically or horizontally, expanding their applications.



Rotational Positioning

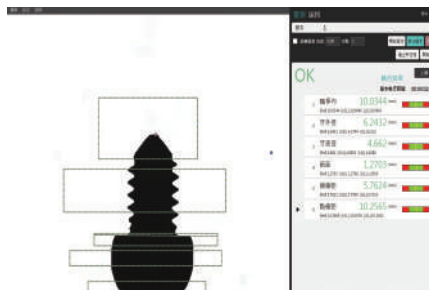


Rotate for geometry measurement

**Professional**  
Parts can be rotated and measured, comparable to CMM measurement.



Large Field of View



Auto Full-size Measurement

**Precise • Automatic**  
Quick full-size measurement



Immediate frame selection measurement (Function Area → Image Area → Data Area)



One-touch measurement

**Simple • Fast**  
Complete measuring functions with quick function keys. Simple Operation and Easy to start.



Easily Place the part



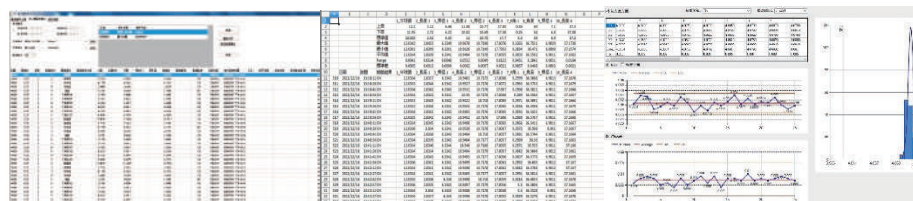
Three-jaw Chuck



Center vise



Magnetic Fixture



Real-time saving of measuring data.

Inspection checklist output

Statistical process control

**Complete • real-time**  
Complete recording of inspection data for traceability and production history querying.



## Precision tool thread measurement



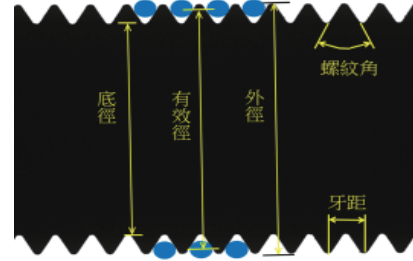
Plug Gauge



Screw Tap



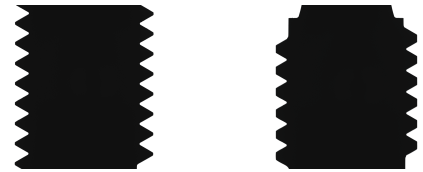
Screw Rod



Measure pitch diameter by digital simulation of three-wire gauge

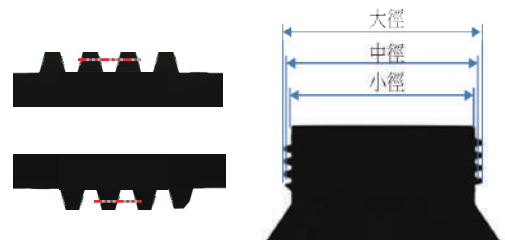
### Ultra-precision measurement of thread

- The measuring uncertainty of the pitch diameter is  $\pm 1\mu\text{m}$ .
- The measurement result of thread is traceable to the certified plug gauge.
- Full inspection is available for gauging outer diameter, pitch diameter, pitch, and crest angle.



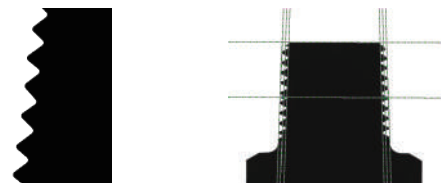
### Precision measurement of trapezoidal thread

- Fast measurement of trapezoidal thread dimensions without a ring gauge.
- Fast measurement of trapezoidal thread dimensions without a ring gauge.



### Precision measurement of PT threads Precisely measure pitch diameter and thread angle without using a three-wire gauge.

- Fast measurement of PT thread dimensions.
- Non-contact digital measurement for accuracy and speed.



### Precision measurement of various screw rod's dimensions

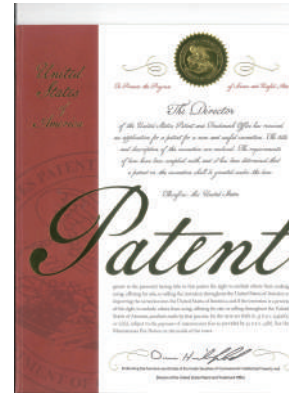
- Precisely measure major, mean, minor diameters, and pitch of screw rods.
- Measure profile dimensions of screw threads accurately.
- Replace length measuring instruments with image automatic detection of full thread length.



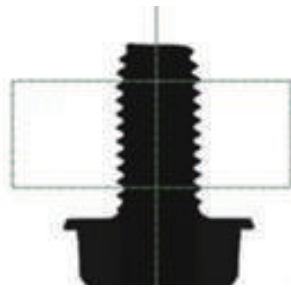
# Measurement of trilobular screws and coaxiality between thread and head

## Features of patented measurement technology

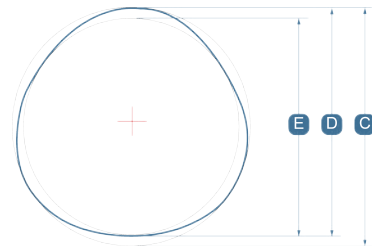
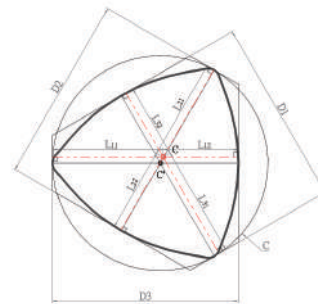
- No need for axial alignment to rotate shafts.
- Automatic scanning of circumferential profile from images.
- Analysis of C, D, and E values for trilobular screws.
- Inspect roundness, coaxiality, and runout.



Trilobular screws



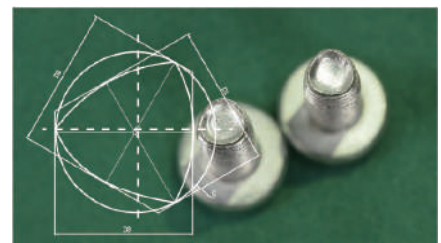
Telecentric image of trilobular screws



Analysis of profile dimensions of trilobular screws

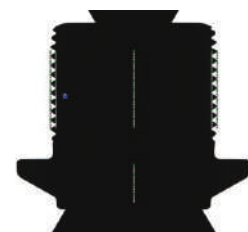
## Measurement of trilobular screw

- Rotate and automatic scan for C, D, and E values without traditional gauges.
- Automatic measurement of triangular screw threads and the coaxiality of screws in seconds without precise centering.



## Quick Measurement of Screw Coaxiality

- Automatically Measure the coaxiality of a 30mm-length screw in 5 seconds.
- Be easier to operate and more reliable than probe-type coaxiality meter.



# Measurement databank fully records production history for QA

- ◆View basic analysis of measuring data at any time in-process.
- ◆Export measuring data for process capability analysis.

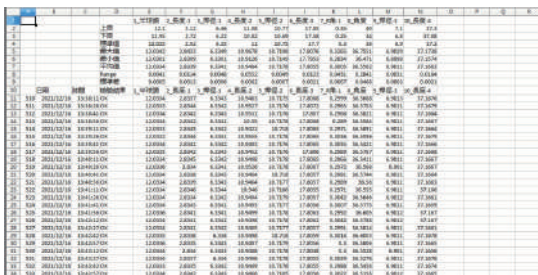
## MDB Database Application Software (Basic)



Manually enter product inspection information.



Measuring data is saved in real-time.

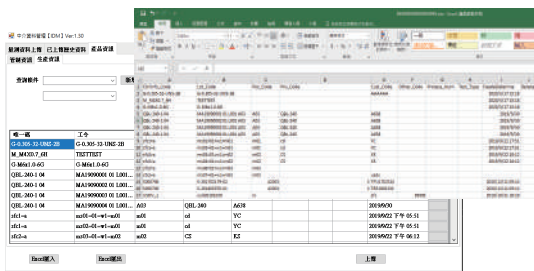


Collate measuring data.  
Browse data for basic analysis.



Print inspection checklist and save as a PDF report.  
Data can be exported in Excel format.

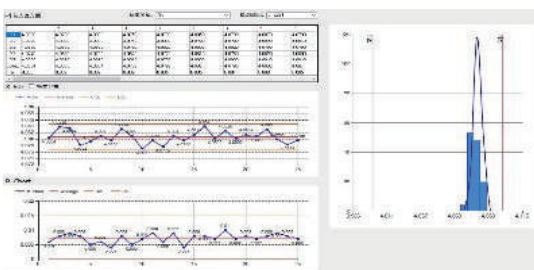
## MDB Database Application Software (Advanced)



Link ERP/MES for import or export of production/quality control information.



Hybrid data can be imported.  
(including data from other gauges)



Query historical measurement data and analysis.  
(e.g. X bar, R chart, Cpk)



Print and export inspection checklist,  
as well as create your own.

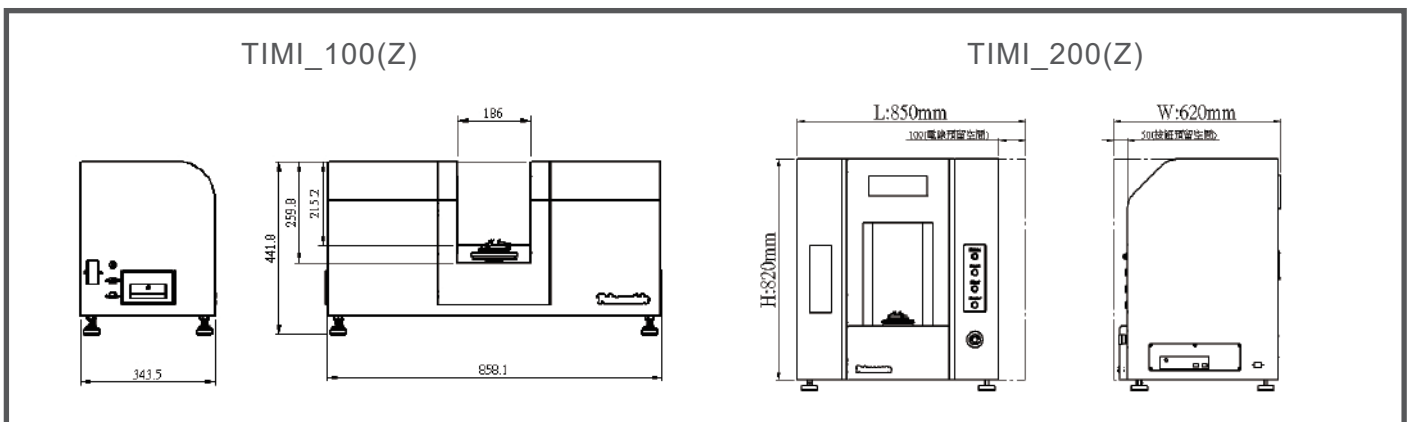
# Machine Specifications

Spec	Model	TIMI12F	TIMI30F	TIMI40F
Measuring Diameter (D)		ø12mm	ø30mm	ø40mm
Measuring Length(Z)		100mm	100mm / 200mm	
Rotatable range (R)		360°		
Repeatability (D)[#1]		±0.2μm	±0.3μm	±0.4μm
Uncertainty (D)[#2]		±(2+D[mm]/100)μm		
Image Resolution		7μm	15μm	19μm
Minimum display unit		0.1μm		
Rotational Resolution (R)		≤0.1°		
Clamping Method		Three-jaw clamp		
Central Processing Unit (CPU)		Intel Core i5以上		
Memory Capacity		8GB RAM , 128GB SSD , 500GB HDD		
Monitor		22 " LCD		
Operating System		Windows10		
Weight (without computer)		50~70Kg(Depends on the measurable length)		
Power Supply		110~240V , 50~60Hz , 10A		
Operating Ambient Temperature		0°~45°C		
Operating Ambient Humidity		≤ 80 %		

#1: Repeatability is calculated by measuring the fixed position of a standard gauge repeatedly without the connection of the motion mechanism and estimating the statistical value  $\pm 2\sigma$ .

#2: The measurement uncertainty is calculated by arbitrarily measuring a standard gauge without the connection of the linear motion mechanism and estimating the statistical value  $\pm 2\sigma$ .

## Machine size



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