

# 3D Flexible Gauge CP1057

CATALOG No. E4269-360

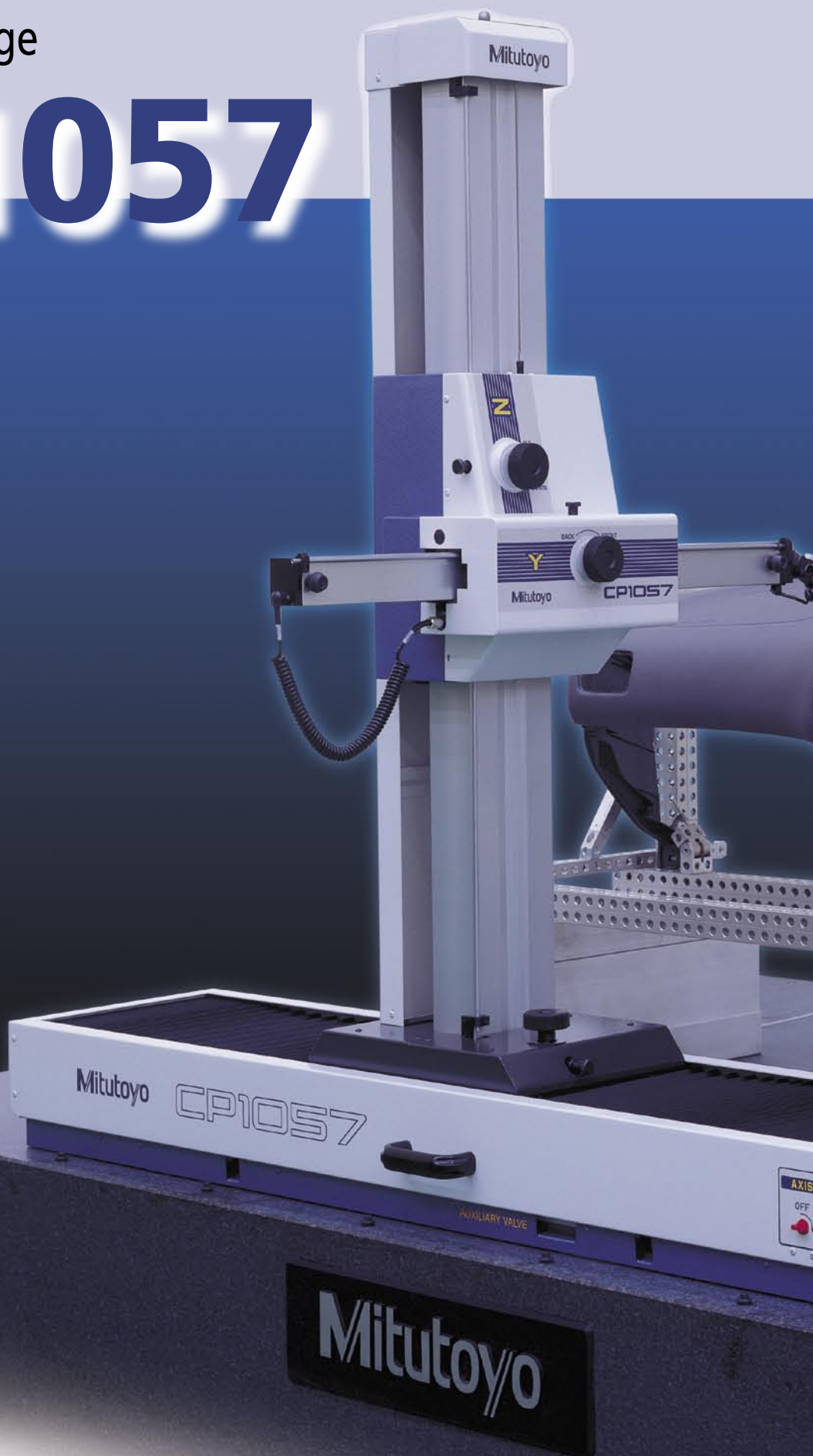


Simple Measurement and Evaluation  
on the Shop Floor

**Mitutoyo**

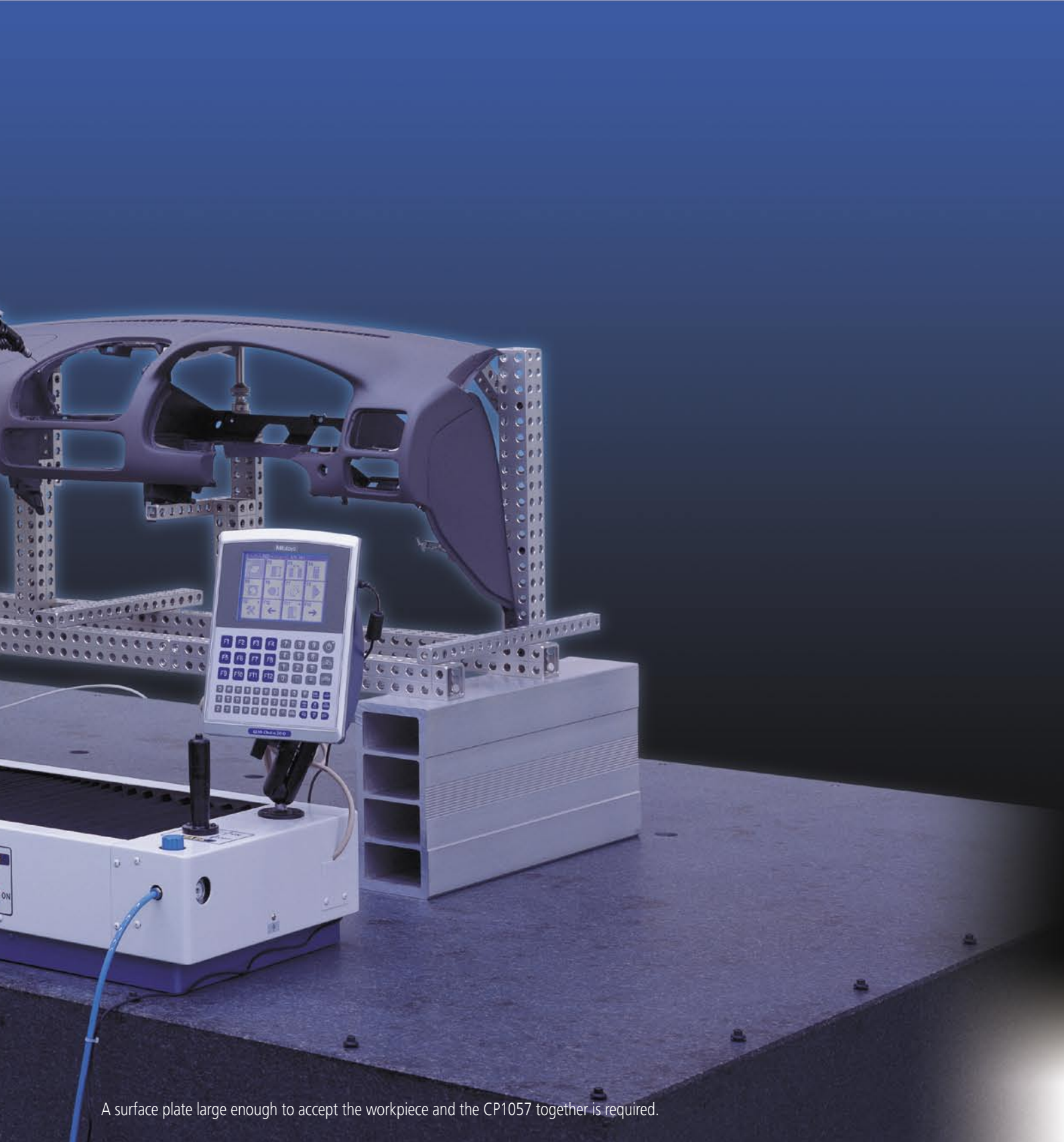
3D Flexible Gauge

# CP1057



**Mitutoyo**

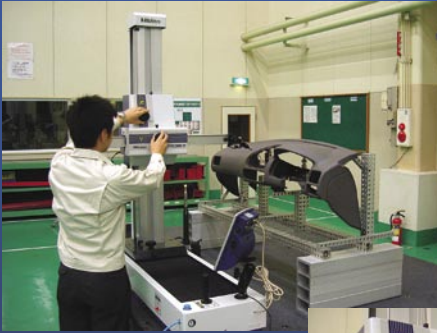
This 3D Flexible Gage is Mitutoyo's new solution for easy workpiece measurement and evaluation on the shop floor.



A surface plate large enough to accept the workpiece and the CP1057 together is required.



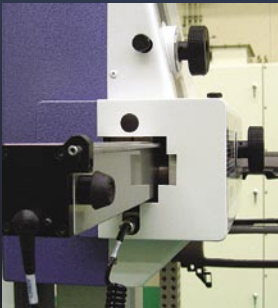
## Operating Convenience



The user makes a measurement by simply operating the X, Y, and Z control wheels to bring the touch trigger probe into contact with target points on the workpiece. The zero friction guideways and high machine stability allow easy target point probing.



## Air Bearings on Every Axis

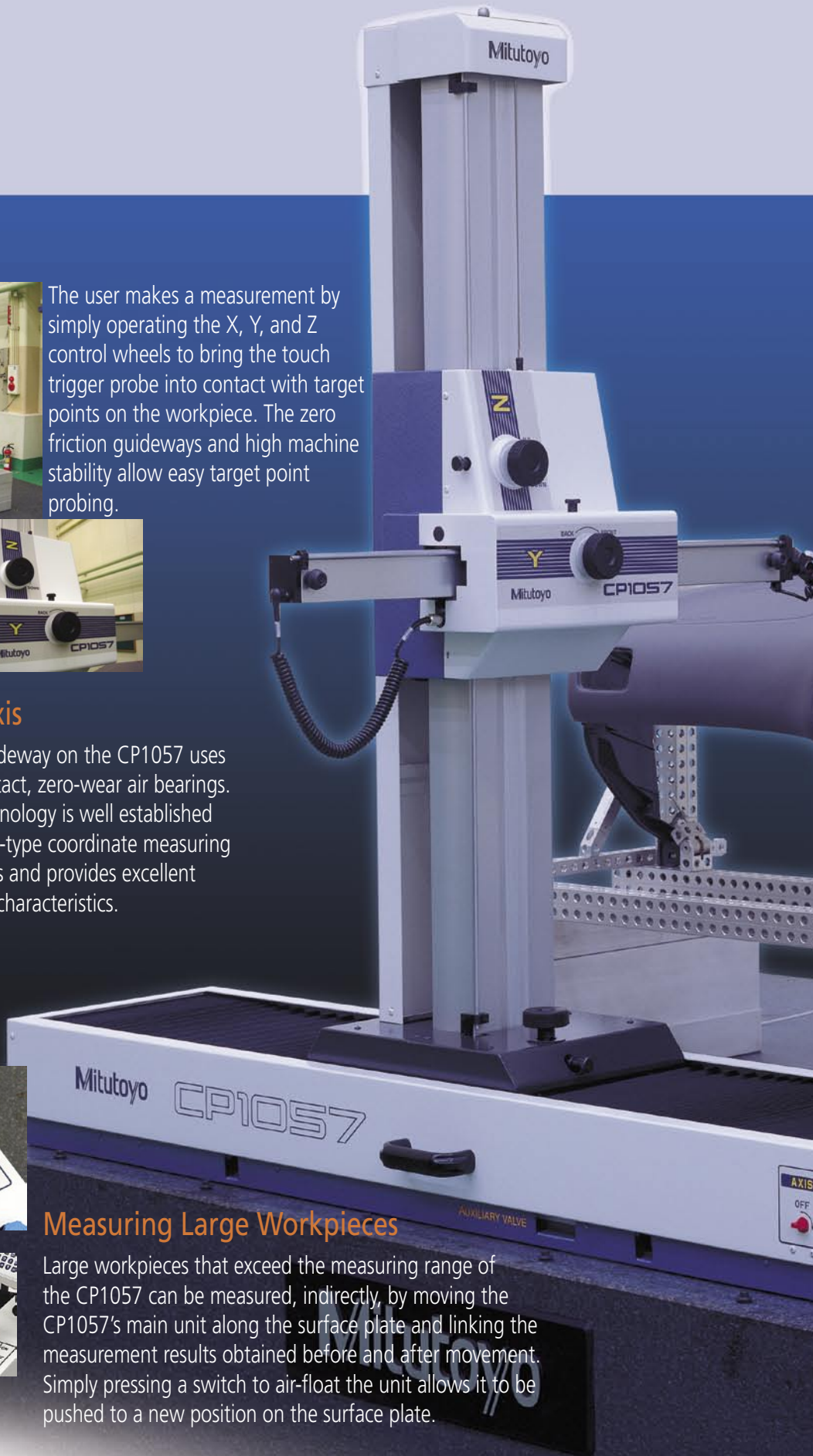


Each guideway on the CP1057 uses non-contact, zero-wear air bearings. This technology is well established in bridge-type coordinate measuring machines and provides excellent traverse characteristics.



## Measuring Large Workpieces

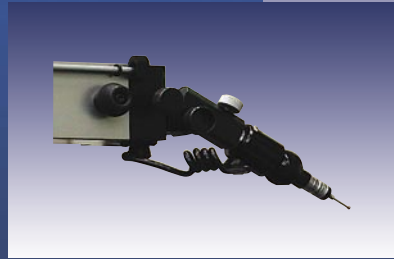
Large workpieces that exceed the measuring range of the CP1057 can be measured, indirectly, by moving the CP1057's main unit along the surface plate and linking the measurement results obtained before and after movement. Simply pressing a switch to air-float the unit allows it to be pushed to a new position on the surface plate.



# Mitutoyo

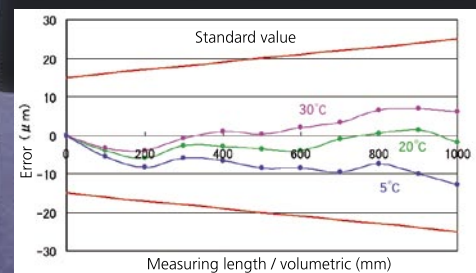
## A Choice of Probes

Various probes are available for the CP1057, such as a point probe that can be used for scribed line pointing measurements, in addition to the standard touch-trigger probe.



## Easy-to-Operate Data Processing Unit

The CP1057 is equipped with the QM-Data 300 dedicated data processing unit that has increasingly gained favor in the QM-Measure system. Also, a new menu set has been added with special functionality that provides easy and rapid measurement of sheet metal products and molded plastic products. All QM-Data 300 icon based menus are designed for simplicity and easy-of-use to ensure maximum efficiency when measuring workpieces of all types and degrees of complexity in the shop floor environment.



## High-accuracy Scales

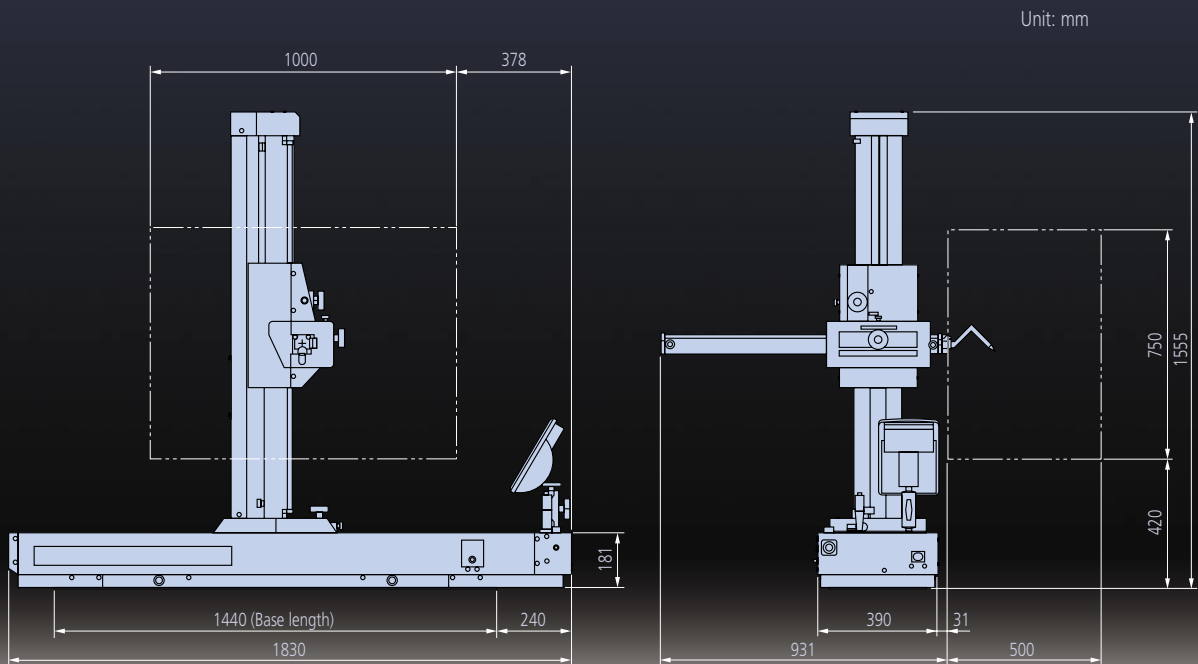
The CP1057 is equipped with the original sealed type Linear Encoders highly respected for their corrosion resistance and long-term reliability.



## Main Unit Specifications

<b>Model</b>	<b>CP1057</b>
Measuring range	X=1000mm, Y=500mm, Z=750mm
Measuring accuracy	E=(15+10L/1000) $\mu$ m (Mitutoyo Standard)
Probing accuracy	R=12 $\mu$ m (Mitutoyo Standard)
Resolution	0.5 $\mu$ m
Probe positioning method	Manual via control wheels
Air supply requirements	Air pressure: 0.4Mpa (0.5 to 0.9Mpa for the air source) Air consumption: 40L/min (100L/min for the air source)
Environmental temperature limits for stated accuracy	Temperature range: 19 to 21°C Temperature rate of change: 2.0K/8h Temperature gradient: 0.5K/m (both horizontal and vertical)
Environmental temperature limits for stated accuracy when using temperature compensation system	Temperature range: 15 to 30°C Temperature fluctuation: 2.0K/h and 5.0K/24h Temperature distribution: 1.0K/h (both horizontal and vertical)
Operating temperature	10 to 30°C
Surface plate flatness	ISO 8512-2 (JIS B7513) Class 1 or equivalent
Mass of main unit	225kg

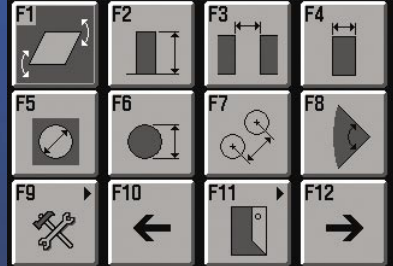
## External View and Dimensions



# The QM-Data 300 Easy-to-Use Menus

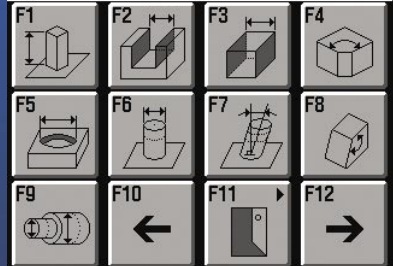
## Standard Measurement Menus

Gage-like measurement menu 1/5 (A)



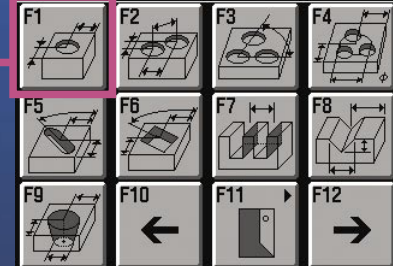
- F1: Reference plane
- F2: Height
- F3: Inside width
- F4: Outside width
- F5: Inside diameter
- F6: Outside diameter
- F7: Circle (center to center)
- F8: Included angle
- F9: Various settings
- F10: To Menu 5/5
- F11: End
- F12: To Menu 2/5

Gage-like measurement menu 2/5 (B)



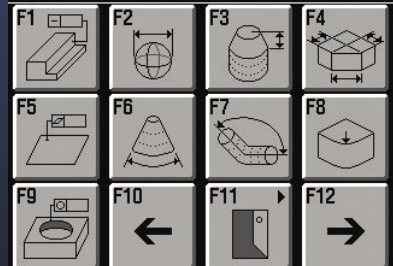
- F1: Height
- F2: Inside width
- F3: Outside width
- F4: Included angle
- F5: Inside diameter
- F6: Outside diameter
- F7: Cylinder tilt angle
- F8: Spatial angle (plane to plane)
- F9: Various settings
- F10: To Menu 1/5
- F11: End
- F12: To Menu 3/5

Gage-like measurement menu 3/5 (C)



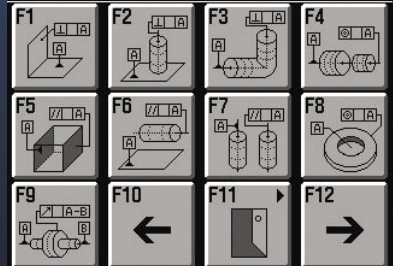
- F1: Circle (hole/pin) position
- F2: Circles (center to center)
- F3: Angle between 3 circles
- F4: Pitch circle (diameter, position)
- F5: Slot (position, angle)
- F6: Square hole (position, angle)
- F7: Square groove pitch
- F8: V groove
- F9: Taper cut-end circle
- F10: To Menu 2/5
- F11: End
- F12: To Menu 4/5

Gage-like measurement menu 4/5 (D)



- F1: Straightness
- F2: Sphere diameter
- F3: Taper height
- F4: Chamfer length
- F5: Flatness
- F6: Taper angle
- F7: Angle (cylinder to cylinder)
- F8: Corner R
- F9: Roundness
- F10: To Menu 3/5
- F11: End
- F12: To Menu 5/5

Gage-like measurement menu 5/5 (E)



- F1: Squareness (reference-plane to plane)
- F2: Squareness (reference-plane to cylinder)
- F3: Squareness (reference-cylinder to cylinder)
- F4: Coaxiality (reference-cylinder to cylinder)
- F5: Parallelism (reference-plane to plane)
- F6: Parallelism (reference-plane to cylinder)
- F7: Parallelism (reference-cylinder to cylinder)
- F8: Concentricity (circle to circle)
- F9: Run out
- F10: To Menu 4/5
- F11: End
- F12: To Menu 1/5

Measurement example

STEP1

Page 3/5 - Select F1



STEP3

Input data as per screen guidance. Perform measurement in serial order on the Assist screen.



STEP2

The Assist screen appears.



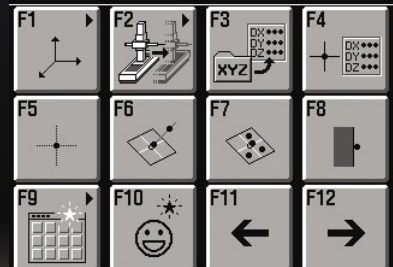
STEP4

The results is displayed.



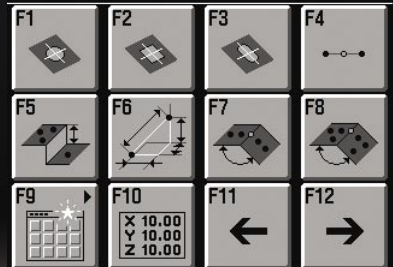
## Sheet Metal Measurement Menus

Sheet metal measurement menu 1/3



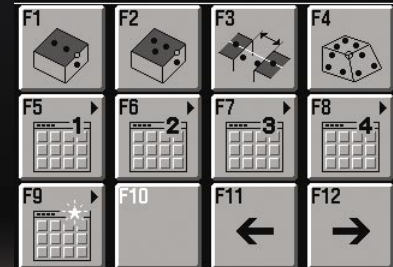
- F1: Coordinate setup
- F2: Measuring unit traverse
- F3: Navigation file read
- F4: Navigation
- F5: Position (one point)
- F6: Input-orientation-compensated side measurement
- F7: Plane-oriented side measurement
- F8: Side measurement
- F9: To main menu
- F10: To Multi-function menu
- F11: Back
- F12: Next

Sheet metal measurement menu 2/3



- F1: Tilted-plane circle parameters
- F2: Tilted-plane square hole parameters
- F3: Tilted-plane slotted hole parameters
- F4: Mid-point position
- F5: Step height
- F6: Distance (point to point)
- F7: Angle between intersecting planes (line definition)
- F8: Angle between intersecting planes (plane definition)
- F9: To main menu
- F10: To Multi-function menu
- F11: Back
- F12: Next

Sheet metal measurement menu 3/3



- F1: Edge (without plane information)
- F2: Edge (with plane information)
- F3: Clearance between edges
- F4: Point (by intersecting planes)
- F9: To main menu
- F10: To Multi-function menu
- F11: Back
- F12: Next



Coordinate Measuring Machines

Vision Measuring Systems

Form Measurement

Optical Measuring

Sensor Systems

Test Equipment and  
Seismometers

Digital Scale and DRO Systems

Small Tool Instruments and  
Data Management

### Mitutoyo Corporation

20-1, Sakado 1-Chome,  
Takatsu-ku, Kawasaki-shi,  
Kanagawa 213-8533, Japan  
T +81 (0) 44 813-8230  
F +81 (0) 44 813-8231  
<http://www.mitutoyo.co.jp>

# Mitutoyo

Note: All information regarding our products, and in particular the illustrations, drawings, dimensional and performance data contained in this pamphlet, as well as other technical data are to be regarded as approximate average values. We therefore reserve the right to make changes to the corresponding designs, dimensions and weights. The stated standards, similar technical regulations, descriptions and illustrations of the products were valid at the time of printing. In addition, the latest applicable version of our General Trading Conditions will apply. Only quotations submitted by ourselves may be regarded as definitive.