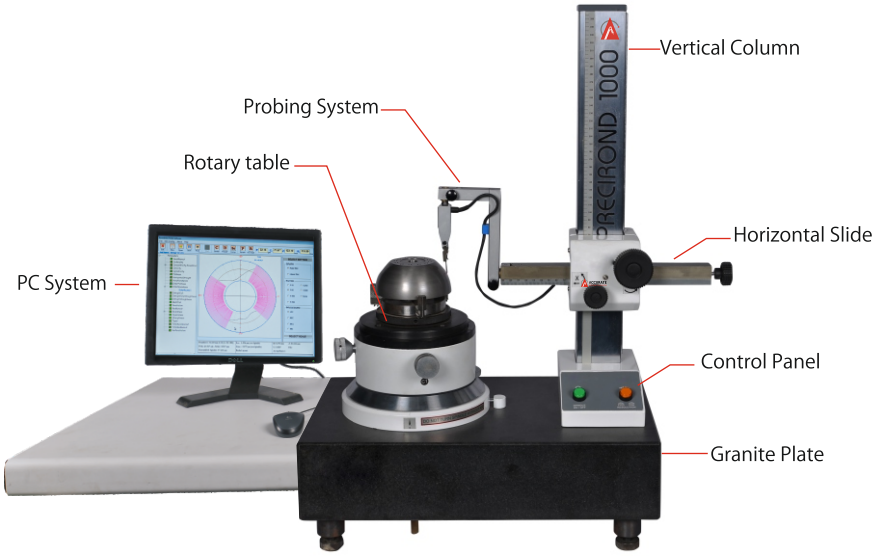
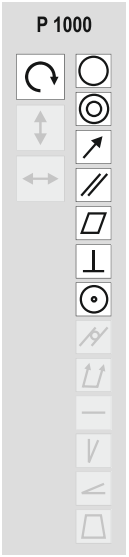
MEASURING MACHINE

Compact and cost-effective roundness measuring systems

ACCURATE
Metrology & Automation
Since 1984

PRECIROND 1000





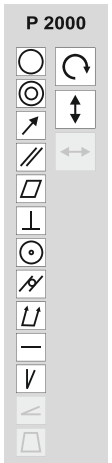
The Compact roundness measurement system Precirond 1000 is designed to operate on shop floor with granite base and isolation pads. Complete with powerful data analysis software 'Winround' and enhanced functionality and easy of operation.

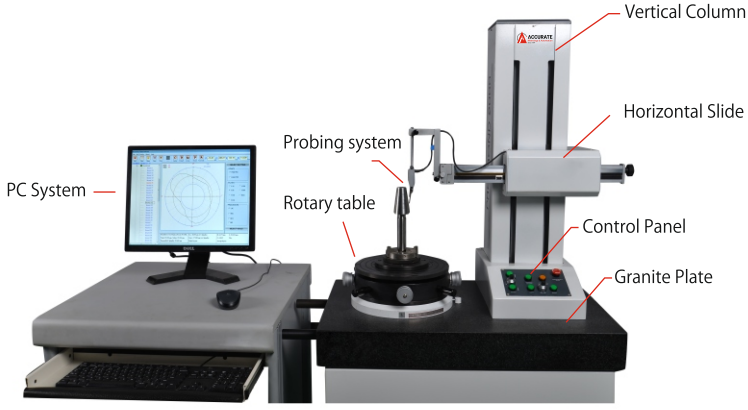
Features

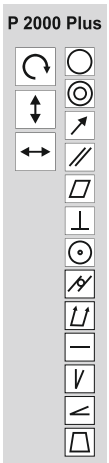
- Air bearings for high accuracy table rotation and long-lasting precision
- Table diameter of 160mm to accommodate parts weighing up to 25kg and for part testing on rotationally symmetrical workpiece
- High Precision Gauge head to give excellent repeatability & linearity over entire range
- Designed to operate on shop floor Granite base and vibration isolation pads provided
- Variety of optional Styli-many optional Styli & Extension probe holders are available for different applications
- It can accommodate work pieces up to height 350mm and diameter up to 300mm

Precision measurement of Roundness, Cylindrical form and Straightness

PRECIROND 2000 & 2000 PLUS







For measuring the roundness & parallelism of the small and large ends.

For measuring the roundness on half round bearing

For measuring the roundness of uneven shapes and sizes parts

The Precirond 2000 & Precirond 2000 Plus are ideal for measuring precision parts where cylindrical form needs to be measured in addition to the roundness. Both models have a high precision vertical measuring axis with measuring distance 400mm (As per customer request) & motorised movement. In addition Precirond 2000 Plus has a precision, horizontal measuring axis with a measuring distance of a radial 150mm & motorised movement.

Evaluation Software with Parameter - Oriented user Guidance

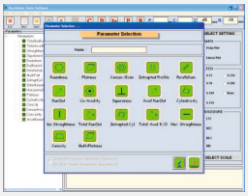
Winround Evaluation Software

Winround roundness measurement software is based on ANSI/ISO 1101 GPS standards it is user friendly with simple measuring program. Winround supports measurement & evaluation of following geometrical features -

- Roundness
- Cylindricity
- Eccentricity
- Concentricity
- Squareness
- Straightness
- Co-Axiality
- Flatness
- Slope Vertical & Horizontal
- Radial & Axial Runout
- Total Radial & Axial Runout
- Conicity
- Interrupted Roundness & Cylindricity
- Parallelism

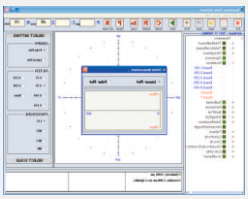
Advantages at a glance

- The Colour display facilitates the reading of all measuring parameters. The functions are easy and directly accessible
- Winround is assisted with manual centering and leveling adjustment
- Filters: To remove the roughness / waviness components of specific wavelength from the actual measured profile. It is expressed in undulation per revolution (UPR) various filters selection from 0-15, 0-50, 0-100, 0-150, 0- 250, 0-500 & none are possible depending on requirements
- 50% Gaussian filter is more accurate than 2CR Filter since wavelength near the cutoff are more sharply distinguished in case of Gaussian filter either as waviness / roughness
- Calculation Method: Roundness measurements can be made with reference to LSC (least squares reference circle), MZC (minimum zone reference circle), MCC (minimum circumscribed circle), MIC (maximum inscribed circle) Flatness measurements can be made with reference to LSC
- Selectable Magnification: For easy assessment of measured profile, user can choose desired magnifications with different scales.
- Interrupted Profile / Cylindricity evaluation possible
- Archiving / logos: save and load measurements
- Detailed 3D representations of the measurement such as cylindricity and flatness simplify evaluation.



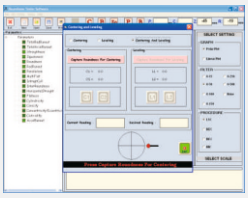
Icon Base Parameters

User friendly windows based evaluation software with quick selection of Icon Base system.



Measurement

Visualization of the measuring profile through graphical Display allows an evaluation to be made during the measurement

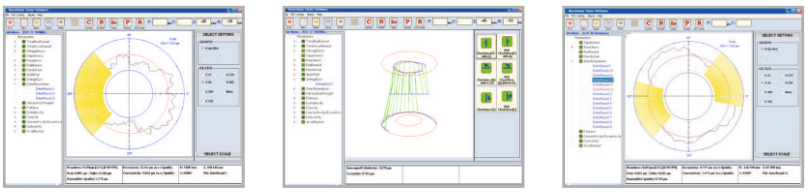


Alignment

Software assisted manual centering and leveling adjustment: Aditya Winround software provides quick centering and leveling of work piece on the turn table. Tilting table facilitate leveling of both short and tall components

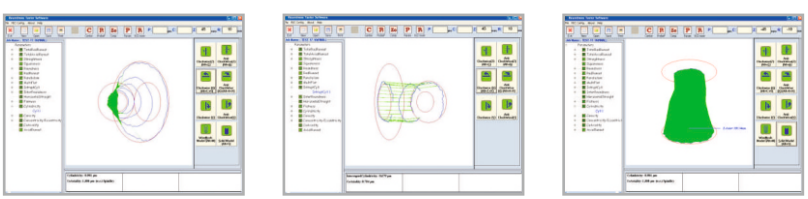
Interrupted Profile

Winround Software allows to measure Interrupted Profile / Cylindricity by deleting the specific sector after measurement for roundness



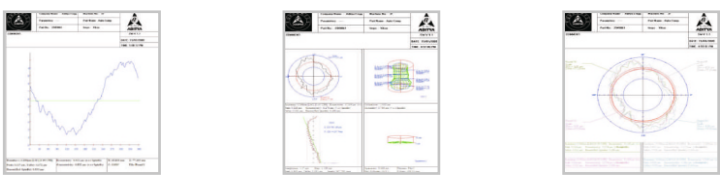
Analysis

The measuring profiles are shown clearly in (3D) graph after scanning the workpiece



Report Formats

Customize Report Formats for various Measuring Parameters



TECHNICAL DATA

	Poduct Code Model	C1201010400 PRECIROND1000	C1201020400 PRECIROND 2000	C1201030400 PRECIROND 2000 PLUS
PLUS SPECIFICATIONS				
MEASURING FUNCTIONS				
MEASURING RANGE				
Max. Test Diameter	mm	300	300	300*
Max. Measuring Height	mm	350	400	400*
Distance C-Z Axis	mm	200	240	240*
Max. Load	kg.	25	25	25*
WORK TABLE & SPINDLE (C-AXIS)				
Work Table Diameter	mm	160	250	250
Work Piece Alignment		manual	manual	manual
Rotational Accuracy + um/mm of measuring height (h)	µm		0.05+0.0005h(h in mm) (at 0-50 upr in LSC)	
Axial Accuracy +um/mm of radius(r)	µm		0.08+0.0005r (r in mm) (at 0-50 upr in LSC)	
Centering Range	mm	±2	±3	±3
Leveling Range		±30′	±1°	±1°
Spindle Speed	r.p.m.		2-4	
Bearing			Air	
VERTICAL – AXIS (Z – AXIS)				
Measuring Traverse	mm	300	400	400
Drive		manual	motorized	motorized
Straightness error/ measuring height	µm	N/A	1.0	1.0
Parallelism C - Z Axis	µm	N/A	1.0	1.0
HORIZONTAL – AXIS(R – AXIS)				
Measuring Traverse	mm	150	150	150
Drive		manual	manual	motorised
Straightness error/ measuring radius	µm	N/A	N/A	1.5
GAUGE HEAD				
Maximum Range	mm		±0.3	
Resolutation at Maximum Range	µm		0.1	
Minimum Range	mm		±0.04	
Resolutation at Minimum Range	µm		0.01	
Measuring pressure	N		0.1	
FILTERS / EVALUATION METHOD				
Filter			Gaussian / 2 CR selectable from	
Evaluation Method			0-15, 0-50, 0-100, 0-150, 0-250, 0-500 none upr LSC, MZC, MIC, MCC	
Magnification			Selectable	
ELECTRICITY / AIR SUPPLY				
Electric Supply			AC 230 V, 50 Hz	
Air Supply			supply 5 bar (operating 4 Bar)	
Air Consumption			0.04 cu.m / min	
WEIGHT / DIMENSION				
Length	mm	600	720	720
Width	mm	600	450	450
Height	mm	1350	1465	1465
Weight(approx)	kg	50	230	230

*Customer Requirement on request.

Accessories

Standard

Flick Standard (Sensitivity Master)

For Dynamic Calibration of gauge head sensitivity

Cresting Standard

For checking vertical & horizontal alignment of the gauge head.

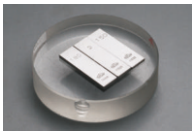
Optional

Stylus Kit

Ruby Ball. Dia 1 X 40 mm,
4 X 40 mm, 1 X 100 mm, 4 X 100 mm.

Gauge Head Calibration Set

Calibration of gauge head. Comprise of optical flat with 1.5, 1.8, & 2.0 mm gauge Blocks.

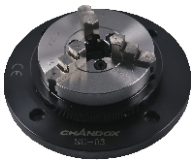


Glass Hemisphere

Used for checking overall system performance.
Roundness <0.06 µm.

Six Jaw Chuck / Three Jaw Chuck

A six / three jaw precision scroll chuck for clamping a small dia work pieces. External Range 2-32 mm / 2-40 mm.
Reversible External Range 82 mm / 85 mm
Internal Range 16-74 mm / 25-85 mm.



Master Cylinder Dia. 60 X 300 mm

For checking instrument's vertical.
straightness & parallelism to the spindle axis.
Roundness <0.8 µm
Straightness <1.0 µm
Cylindricity <2.0 µm.

Various Geometrical Measurement on Precirond

PARAMETERS	C	C Z	C Z R	APPLICATION
ROUNDNESS	•	•	•	
CONCENTRICITY / ECCENTRICITY (e)	•	•	•	
RUN OUT	•	•	•	
FLATNESS (single circumference)	•	•	•	
PARALLELISM (single radius)	•	•	•	
SQUARENESS	•	•	•	
CO-AXIALITY (single section/axis)	•	•	•	
CYLINDRICITY		•	•	
TOTAL RADIAL RUNOUT		•	•	
STRAIGHTNESS (vertical)		•	•	
VERTICAL SLOPE		•	•	
STRAIGHTNESS (horizontal)			•	
TOTAL AXIAL RUNOUT			•	
FLATNESS (multi circumference)			•	
HORIZONTAL SLOPE			•	
CONICITY (vertical)			•	

ACCURATE
Metrology & Automation
Since 1984

Accurate Metrology And Automation Company

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Note : Due to continuous Improvements at our end, Specifications are subject to change without prior notice.