AIR PLUG GAUGE TO CHECK ID / BORE

- Can be supplied for through bore / blind bore applications.
- Adjustable depth collars can be provided for checking a specific depth.
- Range: 2 mm to 200 mm.
- Hard chrome plated.
- Though / blind / step bore.
- Two setting rings required.
AIR CALLIPER GAUGE TO CHECK OD

- Range: 10mm to 180 mm Middle
- Two setting masters required.
- Offered with Snap Gauge with jet fixed in Carbide tip
- Please specify the unit for which Air snap gauge is required.
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- Two Jet Air Ring Gauge to check outside diameter, Taper & Ovality.
- Three jet Air Ring Gauge for detecting Lobbing effect @ 120 Degrees
- Can be supplied with Tungsten Carbide wear rings on request.
- Air Ring gauge - above dia. 150 mm available on request.

AIR RING GAUGE TO CHECK OD
Electronic Calliper Gauge for OD 2 Point / 3 Point
High pressure system - High speed of response and self cleaning of gauging area ensures accurate reading of size, taper and ovality at a time.

Non-contact Gauging - Long life due to minimal frictional wear.

Two Setting Masters - Ensures correct magnification of reading at all times.

System Pressure Check Gauge - provides a constant check on the system pressure i.e 3 bars (45 psi), regulated by a high precision regulator built in to the unit.

Minimum line pressure required 4.5 bars (67 psi)
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- Vertical Bar Graph (Tri Colour/Red/Umber/Green) & Red Six digit display
- Absolute/Comparative Measurement
- Auto calibration Facility
- 4 different setting parameters stored
- Metric/Inch Measurement
- Static/Dynamic measurement
- RS 232 Output
- Relay Output 24 V
- Single Tricolour LED for component tolerance status
- Tolerance pointers

<table>
<thead>
<tr>
<th>Range</th>
<th>L.C. on bar graph</th>
<th>L.C. on digital display</th>
</tr>
</thead>
<tbody>
<tr>
<td>± 10 µm</td>
<td>0.2 µm</td>
<td>0.1 µm</td>
</tr>
<tr>
<td>± 25 µm</td>
<td>0.5 µm</td>
<td>0.1/0.5 µm</td>
</tr>
<tr>
<td>± 50 µm</td>
<td>1 µm</td>
<td>1 µm</td>
</tr>
<tr>
<td>± 100 µm</td>
<td>2 µm</td>
<td>1 µm</td>
</tr>
<tr>
<td>± 250 µm</td>
<td>5 µm</td>
<td>1 µm</td>
</tr>
<tr>
<td>± 500 µm</td>
<td>10 µm</td>
<td>1 µm</td>
</tr>
</tbody>
</table>
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- AIR ELECTRONIC CONVERTOR complete with AIR Drier & filter set
- Vertical Bar Graph (Tri Colour/Red/Umber/Green) & Red Six digit display
- Absolute/Comparative Measurement
- Auto calibration Facility
- 4 different setting parameters stored
- Metric/Inch Measurement
- Static/Dynamic measurement
- RS 232 Output
- Relay Output 24 V
- Single Tricolour LED for component tolerance status
- Can connect 4 AIR gauges to Common Unit (Optional)

<table>
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</tr>
<tr>
<td>± 50 µm</td>
<td>1 µm</td>
<td>1 µm</td>
</tr>
</tbody>
</table>
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- Tri Colour Six digit display (ok/not ok/rework)
- Absolute / Comparative Measurement
- Auto calibration Facility
- Metric/Inch Measurement
- Static/Dynamic measurement
- RS 232 Output
- Relay Output 25 V
- Single Tricolour LED for component tolerance status

<table>
<thead>
<tr>
<th>Range</th>
<th>L.C. on digital display</th>
</tr>
</thead>
<tbody>
<tr>
<td>± 2000 µm</td>
<td>1 µm</td>
</tr>
<tr>
<td>± 200 µm</td>
<td>0.5 µm</td>
</tr>
<tr>
<td>± 200 µm</td>
<td>0.1 µm</td>
</tr>
</tbody>
</table>

PRECISE Electronic Tri Colour Digital Display Unit
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- AIR ELECTRONIC CONVERTOR complete with 1.5 mtr. Main air supply (1/4 " BSP) along with filter & AIR Drier set
- Tri Colour Six digit display (ok/not ok/rework)
- Absolute / Comparative Measurement
- Auto calibration Facility
- Metric/Inch Measurement
- Static/Dynamic measurement
- RS 232 Output
- Relay Output 25 V
- Single Tricolour LED for component tolerance status
- Can connect 4 AIR gauges to Common Unit (Optional)

PRECISE Air- Electronic Tri Colour Digital Display Unit
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- AIR ELECTRONIC CONVERTOR complete with 1.5 mtr. Main air supply (1/4 '' BSP) along with filter set and Air Drier Unit (2 / 3 Channel)
- Six digit display
- Absolute / Comparative Measurement
- Auto calibration Facility
- Metric/Inch Measurement
- Static/Dynamic measurement
- RS 232 Output
- Relay Output 25 V
- Tricolour LED for component tolerance status
- Taper Reading (Dia 1 – Dia 2) directly on Display 3

PRECISE  Air- Electronic 3 Channel Digital Display Unit
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- Tri-Color Six digit display
- 2 / 3 / 4 DIA ID / OD Measurement
- Absolute / Comparative Measurement
- Auto calibration Facility
- Metric/Inch Measurement
- Static/Dynamic measurement
- RS 232 Output
- Relay Output 24 V
- Tricour LED for component tolerance status
- Ideal for Crankshaft PIN & JOURNAL Measurement

PRECISE Air- Electronic 3 Channel TRI-COLOR DRO for Crankshaft PIN & JOURNAL Inspection
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- Tri-Color Six digit display
- 6 OD DIA Measurement
- Absolute / Comparative Measurement
- Auto calibration Facility
- Metric/Inch Measurement
- Static/Dynamic measurement
- RS 232 Output
- Relay Output 24 V Optional
- Tricolour LED for component tolerance status
- Ideal for Camshaft DIA Measurement

Camshaft Dia Multigauging Station
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- Six digit display
- Absolute / Comparative Measurement
- Auto calibration Facility
- Metric/Inch Measurement
- Static/Dynamic measurement
- RS 232 Output
- Relay Output 25 V
- Tricolour LED for component tolerance status
- 6 LVDT can be Connected to the Unit
- Combination / Formulas can be edited for each parameter
- Parameter Name can be Programmed as per requirement

PRECISE LCD Digital Display Unit for Multigauging
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE Range of Electronic Display Unit
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE Electronic Pump Distance Checking Gauge
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- Electronic Contact type Multigauging System
- Squareness wrt resting Face
- Dia of Component
- Taper of Component
- 2 Collar Lengths
- Precision LM Guide for Inspection
- LCD Display Unit with Individual Status indication for each Parameter
PRECISE Electronic Contact Type Multigauging System for TULIP
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE Electronic Contact Type Multigauging System for TULIP
PRECISE ELECTRONIC CONTACT TYPE MULTIGAUGING SYSTEM for TULIP

- Electronic Contact type Multigauging System
- Internal Track Width of 32 MM at 120 Degrees on 3 different heights Measured
- 3 Track width at each height total 9 Parameters
- LCD Display Unit with Individual Status indication for each Parameter
- Status indication Lamps for all Parameter
- RS-232 for Data transfer
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- PC Based Electronic Multi-gauging fixture for Round Part
- Inbuilt SPC Software
- Checking 12 Parameters within less than 10 Sec with Part Rotation.
- ID at TOP & BOTTOM
- OD at TOP & BOTTOM
- TAPER of ID & OD
- OVALITY of ID & OD at 2 Levels
- OD to ID Concentricity at 2 LEVELS
- Automatic Cycle START & STOP
- Dynamic reading & automatic recoding of all readings

PRECISE  PC BASED Electronic Multigauging System
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- Electronic Gauging System to check Pulley Distance & Runout
- POKA- YOKE for different process parameter added in the System
- CAST OD checked first, sensor sense the BUSH fitting & then only Cycle Start.
- After Cycle Start Pulley Groove Distance & Runout displayed on LCD Display.
- If both the parameter are OK Pneumatic OK Punch cylinder punch the Component.
- If any one parameter is not within the limit Tower Lamp with Buzzer sounds.
- De-clamp the Comp manually
- Place the comp in rejected bin sensed by Sensor if not placed next Cycle will not start.
- For Runout checking if the pulley is not rotated Buzzer will sound for Runout NOT OK
GearMate Semiautomatic Motorised Gear Roll Tester

- DFCE: Double Flank Composite Error
- TTCE: Tooth to Tooth Composite Error
- Center Distance / DOP
- SPAN
- Bore ID
- Shaft OD
- OPD
- Face Run out
- Ovality of ID
Benefits of GearMate:

- Decision by equipment & not by operator
- Quantified inspection data available
- Inspection can be tracked on a remote PC
- Rework mode is available!!!! (GearMate stops exactly at the tooth with a flicker)
- Auto Cp-Cpk analysis
- PDI at your fingertips, one click PDI
- Accurate and repeatable results
- Breakthrough reduction in manpower
- Assured calibration by inspector
- Zero customer complaints on dimensional account
- Customer delighted by data, fool-proofing and modernization of inspection setup
- One person can handle two equipments
- High productivity 3800 gears/person/shift
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- All new product - The Inductive electronic Probe to gauge to better than 0.001mm
- With Swiss precision miniature linear caged ball bearings to give smooth and accurate measurement over a long period.
- Hardened and ground stainless steel body with 8h6 diameter giving excellent holding possibility.
- 0.6N measuring force.
- Sensitivity. TESA compatible (73.75mV/V/mm)
- With pre-travel adjustment.
- Measuring ranges +/- 1mm and +/- 2mm
- Linearity +/- 0.3% up to +/- 1mm
- With Pre-travel adjustment.
- 2m long shielded Polyurethane cable, with standard 5 pin DIN connector
- With Tungsten carbide ball anvil. Other anvils on request

PRECISE ( WERKA ) Germany Make of LVDT
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE 2D Ht Gauge Customised Probes with Carbide / Ruby Ball
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE Special Shaft Masters
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE Mechanical Dial Type HUB OD checking Gauge with Precision Sliding arrangement
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE  Mechanical Dial Type Groove Dia Gauge Range 80 – 300 mm
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE Mechanical Dial Type CONE DIA HT Gauge
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE Mechanical Dial Type Bearing HT Gauge
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE Mechanical Dial Type Gauges
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE PCD RECIEVER Gauges for Holes Position
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE DAQ & SPC SOFTWARE SOLUTIONS
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE DAQ & SPC SOFTWARE SOLUTIONS
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE DAQ & SPC SOFTWARE SOLUTIONS
INPROCESS GAUGING SYSTEM FOR GRINDING MACHINES - OD GRINDING
INPROCESS GAUGING SYSTEM FOR GRINDING MACHINES ID GRINDING
Coordinate Measuring Machine MADE IN GERMANY

- Granite guide ways of highest quality secures high thermal stability, precision and mechanical rigidity.
- Optimized air bearings are used to realize highest precision and lowest air consumption.
- The single lock for each axis enables the operator to lock an axis and to perform precise measurements within a plane.
- A two-stage fine drive in all axes. This allows fast and very precise motions, for the measurement of tight contours.
- All geometric elements can be measured, graphically displayed and recorded. Evaluation of all shape and position tolerances. ISO tolerance database is integrated.
- Measuring programs via Teach-In. CAD files in IGS and STEP format can be imported.
- Elements can be selected by clicking on the CAD model to create the nominal data.
- CMM SMART Manual “Made in Germany” - Uncertainty acc. ISO 10360-2 MPEe=3+L/250, MPEp=3,5μm
Granite guide ways of highest quality secures high thermal stability, precision and mechanical rigidity.

Optimized air bearings are used to realize highest precision and lowest air consumption.

Joystick MCU Lite by RENISHAW with function keys, speed regulation and emergency-stop.

Probe changer MCR 20 For full automatic system operation. Stores up to 6 probe modules

All geometric elements can be measured, graphically displayed and recorded. Evaluation of all shape and position tolerances. ISO tolerance database is integrated.

Measuring programs via Teach-In.

CAD files in IGS and STEP format can be imported.

Elements can be selected by clicking on the CAD model to create the nominal data.

CMM RAPID Plus CNC “Made in Germany” - Uncertainty acc. ISO 10360-2

MPEe=2,2+L/350, MPEp=2,5μm

Calculated sections guarantee highest rigidity, dynamism and constant precision

Guiding parts of natural granite of the highest quality secure protection against temperature impacts on guidance precision and long-term stability

Besides high precision the optimised air bearings also guarantee fluent operation with low wear and vibration damping

Compensation of quill weight by precision controlled pneumatic cylinder

Systems of distance measuring: photoelectric light system by RENISHAW

Resolution 0.0005 mm

Feed speed max. 530 mm/s

Acceleration max. 1400 mm/s
Granite guide ways of highest quality secures high thermal stability, precision and mechanical rigidity.

Optimized air bearings are used to realize highest precision and lowest air consumption.

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CMM RAPID Plus CNC “Made in Germany” - Uncertainty acc. ISO 10360-2
MPEe=2,2+L/350, MPEp=2,5μm

Highest precision, robustness, thermical stability and highest stiffness are guarantee through fine guide-materials like granit or ceramic. Optimized air bearings ensure perfect, mechanical accuracy.

Belt drive in all axis. Belt drives crossed by steel cords guarantee the highest rigidity at the lowest wear. That makes the measuring machine largely maintenance-free.

Big center-sleve cross section with that optimized support against rotation around the Z-axis. Ideal for long stylies useable. Additional finelly controlled, pneumatical weight balance of the Z-axis.

Enclosed guide-ways Protect against dirt and thermical factors. The additional closed table guide moreover protect the machine during loading up the work pieces.
Optacom LC 10 Contour & Roughness Measurement Machine  MADE IN GERMANY

Contour and roughness in one single measurement with the optional roughness module
Very good resolution of 30 nm directly at the stylus tip
Y-table optional
Body made of high-strength aircraft aluminium
4 Axis guide and head integrally made from one work piece
4 X axis permanently and absolutely backlash free connected to the Z axis
4 Contactless and absolutely wear-free linear-incremental measuring system
4 Machine calibration (including stylus tip calibration) in less than 3 minutes
4 Quick stylus tip replacement with optacom quick-release fastener. No tools required and no accuracy loss
4 High-precision linear axes with integrated drive
Optacom VC 10 Contour & Roughness Measurement Machine  MADE IN GERMANY
Impact size, easy operation
Wide measuring range in HLD, direct display of converted hardness values in HB, HRB, HRC, HRA, HV, HS
High applicability, can be used for hardness testing of most metals
Test at any angle even upside down
Optional printer TA250 available
Easy measurement on large & heavy work pieces
Measuring in confined spaces of large work pieces
TH130: integrated with D impact device for normal hardness testing
TH132: integrated with C impact device for hardness testing on thin, light and face-hardened work pieces
TH134: integrated with DL impact device for hardness testing of deep grooves and mould-face (such as tooth surface) work pieces

Portable LEEB HARDNESS TESTER TH 130
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- USB communication interface
- Automatic identification of Impact test direction
- Memory of 270 average readings in 9 files
- Upper and lower limit setting
- Automatically switch off
- Backlight for convenient use in darkness
- Battery capacity display
- AAA 1.5V battery
- Integrated calibration function

PORTABLE LEEB HARDNESS TESTER TH 170
PRECISE GAUGING & AUTOMATION TECHNOLOGY

- Large LCD with back-light, showing all functions and parameters
- On-Board memory holds 240-1000 groups of data
- Automatic identification Impact Devices and test direction (Except G impact device)
- Time and date setting; auto-clock
- Integrated thermal printer, print all test results and histogram
- Li Battery, low voltage indication and sound alarm
- Upper / lower limits setting and sound alarm
- Software to connect with PC
- Direct display of hardness scales HRB, HRC, HRA, HV, HB, HS, HL
- Conversion to tensile strength (U.T.S.) for all metallic materials
- Wide measuring range
- Six Impact Devices are available for special applications

Portable LEEB Hardness Tester TH 160
Coating Thickness Gauge 

- Two measuring methods: magnetic induction (F) and eddy current
- (N) (Refer to page AAA for details)
- Magnetic induction (F) method is used to measure the thickness of non-magnetic coating on ferrous metal
- Eddy current (N) method is used to measure the thickness of non-conducting coating on non-ferrous materials
- Automatic recognition of substrate
- Automatic selection of measuring methods
- 5 statistical ways: Mean values / Max. values / Min. values / testing numbers (No.) / standard deviations (S.DeV)
- Upper-lower limit setting and sound alarm
- Data output to printer TA230 or PC by RS232
- 500 readings can be stored
- 2 measuring modes: continuous / single
- 2 stop ways: Manual/automatic
Portable size and easy operation
- Suitable for any metallic and non-metallic materials ultrasonic can go through
- Self-compensating of nonlinearity function is supplied for correction of pickup nonlinearity
- 10 measuring values recorded
- Optional 2.5MHz, 5MHz and 7MHz transducers are available
- Clear 4-Digit LCD display with backlight
- 5 pre-set sound velocities for repeating applications
- mm / inch selectable
- TT100 and TT130 are suitable for thickness testing of various materials with sound speed range 1000-9999m/s
- TT110 and TT120 are easy-operation models with only two keys suitable for thickness testing of steel
- TT120: high-temperature model with range up to 300°C

_Ultrasonic Thickness Gauge TT100_
PRECISE WIRELESS FIFO DISPLAY BOARD FOR STORES & LINE INPUT MATERIAL
How does FIFO system work?

Preparation – it’s necessary to address the Street (Shelf), Floor, Module and its subdivisions to identify each location individually.

FIFO Display – you need as many FIFO Displays as the number of locations you have in your warehouse. Each address is placed inside a display.

Empty Locations – in the board all addresses are printed, reflecting the warehouse. For each location there is a hook. The display, when hanged in the board, means an empty space in the warehouse. Its absence means occupied location.

FIFO Board – it has two vertical columns in which the displays slide to the bottom of the column. It has one label holder on the top of the board to indicate the code of the controlled product. The height of the columns are defined by the quantity of locations that the product can occupy in the warehouse.

Running FIFO

- Material In- the operator chooses any empty location on the board of Empty Locations. With the address in hands, he puts the material or product in the location indicated. After this, he heads to FIFO board and puts the display at the top of the correspondent column to the product handled.

- Material Out- knowing the products code, the operator goes to FIFO board and locates the column of the product required. He takes out the first display at the bottom of the correspondent column to the product wanted. He goes to the address indicated, removes the material and delivers to the client. After that, he heads to the Empty Locations Board and hang the display in the correspondent location. And again, the location is available.

Advantages – avoids aging of materials in the warehouse. Eliminates stationary positions, the need to reserve parts of the warehouse to move always the same items, even when those items aren’t in stock, yet, the positions can’t be occupied by another product. With FIFO system you can use any space of your warehouse to keep any of your items, with a considerable gain of space. An investment that results in economy!
PRECISE FIFO DISPLAY BOARD FOR INCOMING MATERIAL
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE MANUAL LEAK TESTING FIXTURE
In First Row: Shift Wise Target Per Hour, Time, Speed, Down Time, Total Target Per Shift.
In Second Row: Actual Production Per Hour in One Shift.
In Third Row: Balance.
In Fourth Row: Total Production In Last Shift, Progress In Percentage, Total Production In One Shift & Balance.
Enclosure: Remote for reset.
Input: Electrical Signal/ Pulses/ RS 485/
RS 232.
Power Supply: 90 – 270 V AC
Mounting: Wall/ Hanging.
PRECISE GAUGING & AUTOMATION TECHNOLOGY

In First Row: Time & Date
In Second Row: Plan per Shift
In Third Row: Current hour production
In Fourth Row: Shift hour production
In Fifth Row: Cumulative Production

Power Supply: 90 – 270 V AC
Mounting: Wall/ Hanging.

PRECISE PRODUCTION DISPLAY
PRECISE GAUGING & AUTOMATION TECHNOLOGY

PRECISE FEW OF RENOWNED CUSTOMERS
THANK YOU.