

FROM CONTACT GAUGING TO GAUGING AUTOMATION



MGPL GAUGES WORK FOR AGES



ABOUT US

Mikronix Gauges Pvt. Ltd. (MGPL) made a modest beginning over 4 decades back. MGPL started manufacturing Plain Limit gauges in steel in Mid 1970s. With consistent focus on R&D , adding value for customers , MGPL introduced indigenously 1st time in India Limit gauges in TUNGSTEN CARBIDE. This was appreciated by customers & was instant success. Today name MGPL is synonymous with QUALITY & LIFE of Gauges.

MGPL continued its R&D , Continual improvements year after year which has converted MGPL in to ONE of the Leading Gauge manufacturer. Today MGPL has 3 manufacturing units and has a team of 110+ members in the family. MGPL has now successfully entered in to field of Gauging Automations. MGPL is ISO9000 certified having its lab which is NABL accredited. MGPL's set up includes latest measuring Equipments , machines backed up by Quality systems. This strong set up has helped MGPL continually export to leading industrial nations like Germany , Japan along with other countries.

MGPL owes it success to team members , valuable customers & associates .

MGPL today is capable of serving the industry to meet challenges in measurement of linear dimensions, other parameters from simple Hand held gauging to highly automated gauging solutions including non contact measuring solutions MGPL also offers solutions in the latest trends like i4.0

MGPL is committed to follow ETHICAL practices while pursuing growth. MGPL strongly believes in the quote "Relativity Applies to Physics, not to Ethics"- Albert Einstein.

We thank all our customers for challenging us , supporting us to reach this level . We also express our Gratitude to all employees of the past , present along with all our associates in helping us reach this stage.

We re-assure every one MGPL will keep on following Ethical practices and fulfilling our vision which is "Be The Respected and Great Company to work with , for customers , employees and associates " .

Looking forward to serving you.

Thanks

Girish Hanchanal
Chairman.

WHY CARBIDE ? BE WISE CARBIDE WISE

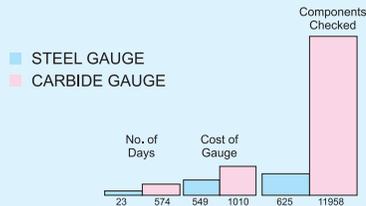
Steel steals !

Steel business is still business!! We say this because steel gauges covertly steal your profits. One tends to think of them as the cheapest alternative as their cost of purchase is lowest. However, the aspect of their age is never taken into consideration and unknowingly, the profit margin is slashed down.

Carbide Heals !

Carbide business is wide business. The reason behind this confident exclamation is the longer life of a Carbide Gauge. It has been proven, that " Carbide Gauge live 20 times longer than Steel Gauges". This comparison shows that Carbide Gauges are extremely economical (to be precise, 11 time) than Steel Gauges.

STEEL VS CARBIDE GAUGE



	LIFE (DAYS)	COST	PARTS/GAUGE
STEEL GAUGE	23	549	625
CARBIDE GAUGE	574	1010	11958

Stunning Observation

Gauge cost per component with steel gauge was 0.87 Ps.

Gauge cost per component with MGPL Carbide Gauge was 0.08 Ps.

CARBIDE AIR GAUGES CARBIDE AIR PLUG GAUGE

- I Can be supplied for Through Bore / Blind Bore applications.
- I Adjustable depth collars can be provided for checking at specific depth.
- I Range : 5mm to 100 mm Steel
- I Range : 10mm to 50mm in Carbide
- I Please specify the unit for which Air Plug Gauge is required.



CARBIDE AIR RING GAUGE

- = Offered with Jet at Center or at Corner for stepped shaft.
- = Range : 5mm to 100 mm Steel
- = Range : 10mm to 50mm in Carbide
- = Please specify the unit for which Air Plug Gauge is required.



AIR SNAP GAUGE

- = Offered with Jet at Center or at Corner
- = Range : 10mm to 100mm with V resting in Carbide.
- = Carbide Air Snap Gauge with Jet Fixed in Carbide Tip
- = Please specify the unit for which Air Snap Gauge is required



CARBIDE PLUG GAUGE

- = Carbide Plug Gauges are normally supplied with GO in Carbide
- = & NOGO in Stabilised Steel.
- = Both can be supplied in carbide as per requirement.
- = MGPL gauges have excellent wall thickness to give desired results.

Range:

0.5 to 8mm

8 to 40mm

40 to 60mm

60 to 400mm

Reversible Type Design

Taper Shank Design

Trilock Design

Plate Type Plug Gauge

- = Extra Length up to 100 mm can be supplied as per requirement.
- = Following designs can be supplied as per requirement.
- = A) Extra Length Plug gauge (B) Air Groove on Plug Gauge (C) Paddle Type Plug Gauge (D) Setting Master in $\pm 1\mu\text{m}$ can be supplied.



CARBIDE RING GAUGE

- = MGPL Carbide Ring Gauges are normally supplied GO in Carbide & NOGO in steel.
- = GO & NOGO both can be supplied if required in Carbide
- = Setting Rings are manufactured in Carbide
- = Manufacturing Range : 4 to 83mm



CARBIDE SNAP GAUGE

- = Gauges as per customer design can be supplied.
- = Supplied normally in single ended design
- = Manufacturing Range : 5 to 200mm
- = Following designs can be supplied as per requirement
- = Blade Type Snap Gauge
- = Groove Type Gauge
- = Template Type Snap Gauge
- = Double Ended



CARBIDE WIDTH GAUGE

- = MGPL has designed Carbide Width Gauges in Reversible type design to suit (A) Piston Industries (B) Pumps & Motors Industries (C) Automobile & Crankshaft manufacturers.
- = Special gauges like Woodruff Width Gauges & Crankpin Width Gauges in Carbide are most suitable to crankshaft manufacturers.



NOTE: GO & NOGO Size Manufactured As Per IS 3455 (1971) Unless Specified

MEASURING PINS

- = MGPL supplies Carbide Measuring Pins in Two Grades
- = Grade I : Manufacturing Tol = $\pm 0.001\text{mm}$
- = Grade II : Manufacturing Tol = $\pm 0.002\text{mm}$
- = Normally having Length=50mm
- = Pins with close tolerance of ± 0.5 micron can also be supplied.
- = Range 0.5 to 20mm

DIAL SNAP GAUGES

- = Available in 6 ranges in steps of 25 mm, up to 150 mm.
 - Parallelism $\leq 3 \mu\text{m}$ for 0-25, 25-50 mm
 - Parallelism $\leq 4 \mu\text{m}$ for 50-75, 75-100 mm
 - Parallelism $\leq 5 \mu\text{m}$ for 100-125, 125-150 mm
 - = Follows Abbe's principle.
 - = Most useful for fast repetitive checks.
 - = Can be supplied with round 8 mm measuring anvil.
 - = Any indicating instrument with 8 mm shank diameter can be used.
 - = Measuring faces chamfered for ease of insertion.
 - = Measuring anvil Carbide tipped.
- Bigger sizes also offered on request.**



MULTIGAUGE

Check both Internal & External dimensions.

Applications:

- = Step diameters Inside & Outside
- = Center to Center distance.
- = Over Pin / Ball measurement for bigger size gears both for Internal & External
- = Groove diameter measurement Internal & External Most useful in Pumps, Motors, Automobile Industries for Flywheels, Bearing Cap, Gears, Brake Drums, Rear Axle etc.

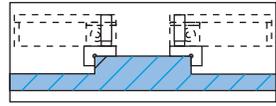
Models :

MG 200 : 30 to 200mm Internal & External

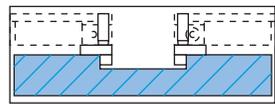
MG 400 : 100 to 400mm Internal & External

MG 600 : 300 to 600mm Internal & External

Bigger sizes also offered on request.



Shoulder Anvils Flat Outside Spigot Diameter



Semi-Cylindrical Anvils For Inside Register Diameters

DIAL TYPE AIR GAUGE UNIT

AIR GAUGE UNIT

- = MGPL Air Gauge Unit is Null Balance pressure system Unit.
- = High Pressure System faster response & self cleaning of Gauging area.
- = Two setting knob for fine setting.
- = Two setting masters ensure correct linear setting.
- = Air Pressure Required 50Psi/3.5Kg/cm²
- = Accuracy +/-2% FSD
- = Range +/-0.020mm, L.C.=0.5micron
- = Range +/-0.040mm, L.C.=1 micron





V1



V2



PZ-10



PZ-20

Digital Displays Units

- = Single / Twin Channel (LVDT/Piezo)
- = 10 program can store in Piezo based units
- = Tri Colour for Showing Accept, Reject, Rework status.
- = Unique scaling factor
- = Least Count : $5 \mu\text{m}$, $1 \mu\text{m}$, $0.5 \mu\text{m}$, $0.1 \mu\text{m}$
- = Auto data transmission via RS-232
- = Mode : CURR, MAX, MIN, DIFF



AEC100

PZ100

INDUSTRY 4.0

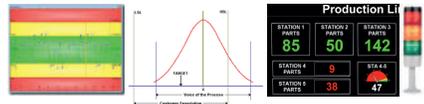
Centralized Data Collection And Reporting System



Features Of The Centralized Server Based Software

Data Rich Reports

- = Cell Wise, Shift Wise Rejection Reports
- = Production Summary Report
- = Process Performance Report
- = OK-REJECT Analysis



Real Time Event And Process Monitoring

- = Monitor Components Manufactured In GREY Zone
- = Track Idle Systems
- = Track Slow Production Speeds
- = Get Warned BEFORE Process Goes Out Of Control

Advanced Statistical Analysis

- = Calculates Over 72 Insightful Statistical Indices
- = C_p , C_{pk} , P_p , P_{pk} , C_{pm} , Expected And Actual Out Of Specs ...
- = \bar{X} -bar-R, \bar{X} -bar-s, Run Chart, Precontrol Chart, Histogram ...

A Fully Interconnected Centralized System : Has Many Advantages

- = Keeps You In Control – At All Times!
- = Stay Informed About Every Small Issue
- = Tackle Issues Before They Become Customer Complaints
- = Track Operator And Machine Performance
- = Generates Reports At The Click Of A Button
- = Keeps Your Customers Happy!

PNEU GAGE/ SMART GAGE

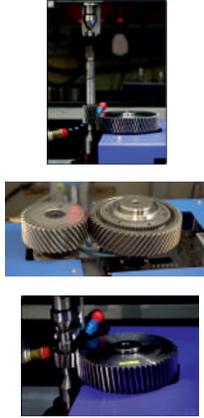
- = 1-6 Piezo Based, 1-8 LVDT Probe Based
- = User selectable display formats : Dial, DRO
- = Least Count : $1\mu\text{m}$, $0.1\mu\text{m}$, also Unit in mm
- = Up to 32 results can generate on 10 different layout
- = 4 GB Memory, 100 no of setup can store (Program)
- = Online SPC i.e. Runtime Cp-Cpk, Pp-Ppk
- = Different Charts like Run Chart, Histogram, x-bar/r-bar
- = Job counters available i.e. OK & Not ok job,
- = Shift wise data storage : Data store in pdf, . csv, . dfq format
- = Data can collect via USB, LAN/Wi-Fi (Need to purchase Wi-Fi Dongle)
- = Low air pressure message and alarm



Dhruv Gauge (Piezo/LVDT)

- = User selectable display formats : Dial, DRO
- = Least Count : $1\mu\text{m}$, $0.1\mu\text{m}$, also Unit in mm
- = Mode : CURR, MIN, MAX, DIFF, AVG
- = Up to 16 results can generate on 4 different layout
- = Password Protected
- = 4 GB Memory – to store program & data.
- = Runtime Cp-Cpk, Pp-Ppk / Run Chart
- = Job counters available i.e. OK & Not ok job
- = Air Saving option / Serial Scanner Integration / Rework-Reject Integration
- = Data storage : Data store in .csv format
- = Measurement & Auto cycle option available
- = Data can collect via USB, LAN/Wi-Fi (Need to purchase Wi-Fi Dongle)





Auto Gear Rolling Tester (AGRT)

With experience of over 40 years in the field of metrology & over 2 decades in Multigauging & computer based gauging solutions, MGPL has introduced advanced gauging solution in Gear measurement.

MGPL introduces Advanced Gear Roll tester meet increasing demands of Gear industry and i4.0. This gauges which is fully automatic is useful to inspect various parameters of Gears in quick time. The gauge does not need any skilled inspector either.

THIS GAUGE CAN BE INTERFACED WITH

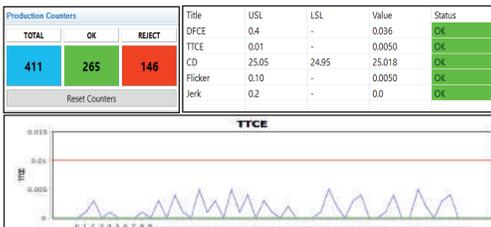
A) Scanning : Data stored GRT details for easy traceability. B) Marking : If parts are found acceptable also data stored accordingly. C) Readings with accept/reject status as well as various graphs for in depth analysis. D) Gauge measures TCE, TTCE, CD and few other parameters. Can be further programmed to meet special needs of customer. The machine is controlled through the AC Servo motor & ACServo Drive.

SOFTWARE FEATURE:

- = Multicolour display (Green = OK, Red = NG, Yellow = Rework)
- = ALL SPC features like Run Chart, Histogram, Cp, Cpk etc.
- = Password protected User Login Facility.
- = Rework Mode & continues inspection mode selection facility.
- = Tailor made dash board/ display can be designed.

MANUAL GRT:

- = Light weight
- = The specimen Gear is meshed with master gear and operator will rotate the Master gear manually and with the help displacement reading on Dial operator will decide the output.

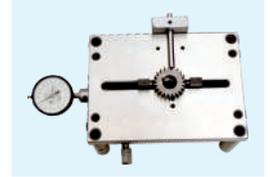




GEAR MEASUREMENT SOLUTIONS

OBD/IBD UNIT

- = MGPL supplies OBD unit with standard carbide ball anvils.
- = Can be used with digital display unit or dial
- = **Pneumatic OBD for precise measurement**

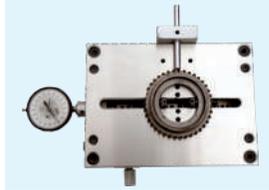


OBD Unit Range

- Range: 10mm – 50mm
- Range: 50mm – 100mm
- Range: 100mm – 150mm

IBD Unit Range

- Range: 25mm – 50mm
- Range: 50mm – 100mm
- Range: 100mm – 150mm



MGPL FIXTURES

FOR CONNECTING ROD :

TWIST, BEND, CD & DIAMETER CHECKING :

- = Air gauging fixture to check Twist, Bend.
- = Center distance checked on Dial / LVDT/ Air Gauges
- = 8 Jet Air Plugs (2 Nos) used.
- = Master can be supplied as per requirement.
- = Big ID/ Small ID can add if Required



FOR CRANKSHAFTS :

CD CHECKING FIXTURE

- = MGPL supplies air gauging fixture to check center distance of the 2 wheeler Crankshaft.
- = Inside diameter & Outside diameter can also be measured in the same fixture.
- = Solution offered to mark the grade also.



ID, OD And Height Checking Gauge

- = Inside bore measurement
- = Outer dia
- = Height
- = Rejection interlocking
- = OK, NG segregation



Keeping An Eye On Future & Responding To The Needs Of Industry For Greater Precision, Greater Speed & Labour Saving Solutions With Precision Measuring Technology, MGPL Has Successfully Entered Air Gauging, Air Electronic Gauging, Auto Gauging, Multi Gauging.

MGPL Executed Many Projects For Multi Parameters Checking Of Variety Of Components. MGPL Developed One Of The Most Advanced Interface Units Which Can Be Used With Specifically Designed Relay Outputs For Marking Or Separating Bad Parts.

SHAFT MULTIGAUGING (Horizontal Model)

Proven design suitable for all kinds of shafts.

Flexible fixture to check diameters, Run Out & Lengths

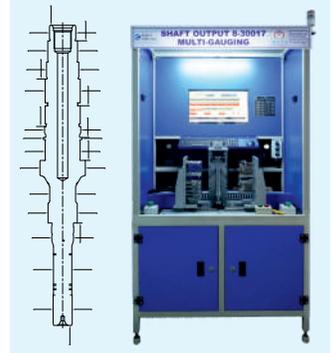
Offered in Horizontal as well as Vertical design.

SHAFT MULTIGAUGING (Vertical Model)

MGPL Designed In Between Center gauging fixture is useful to use with large Variety of shafts.

e.g. Cam Shafts, Transmission Shafts, Input, Output Shafts etc. parameter to check:

- = Diameter
- = Length
- = Concentricity
- = Run Out
- = Taper Angle



CONNECTING ROD MEASUREMENT

To check:

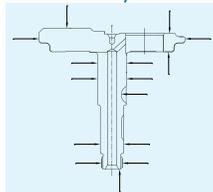
- = Small End Diameter
- = Big End Diameter
- = Twist
- = Bend
- = Center Distance



CRANKSHAFT MULTIGAUGING (2 Wheelers)

To check:

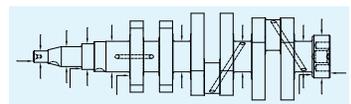
- = Outside Diameters (2/3 Places)
- = Taper
- = Run Out
- = Inside Dia and Grouping
- = CD
- = Keyway - width, depth



CRANKSHAFT MULTIGAUGING (4 Wheelers)

MGPL supplies total solution measuring following parameters of crankshafts.

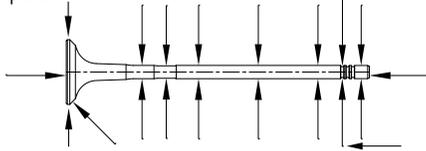
- = Pin Diameter & Ovality (Convexity if required)
- = Journal Diameter and Ovality (Convexity if required)
- = Flange End & Gear End Diameter
- = Throw (Center Distance)
- = Flange end, Gear End
- = Run Out w.r.t 2 Journal PIN Width Woodruff Width.
- = Marking Machine can be add
- = Sensor Poka yoke can be provided for Pin Dia, Jr. Dia And Runout Measurement if required



ENGINE VALVE MULTIGAUGING

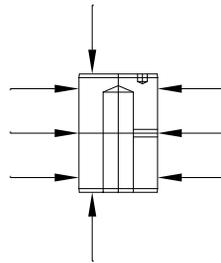
Stem Dia measurement at 3 places.

- = Stem Diameter.
- = Groove Diameter.
- = Total Length.
- = Gauge Plane Length.
- = Valve Seat Runout



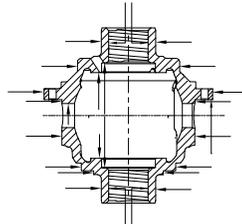
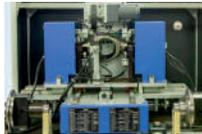
CRANKPIN / PISTON PIN MULIGAUGING

- = Checking Diameters at 2-3 places
- = Taper
- = Grading
- = Grade Marking



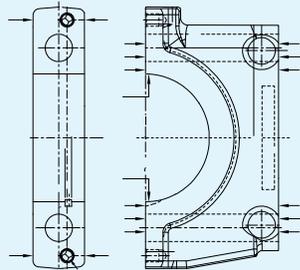
DIFFERENTIAL CASE MEASUREMENT

- = Outside Diameter
- = Inside Diameter
- = Lengths
- = Run Out
- = Distance from Center Hole
- = Sphere Dia



BEARING CAP MULTIGAUGING

- = ID
- = Distance
- = Flatness
- = Parallelism
- = Perpendicularity
- = Half Bore Dia



BRAKE DRUM/ BRAKE DISC MULTIGAUGING

- = Big ID = Run Out = Circularity
- = Thickness
- = DTV (Disk Thickness Variation)
- = Outer diameter
- = Concentricity
- = Acoustic measurement
- = Fast Fourier transform graphs (FFT)



BORE MEASUREMENT MULTIGAUGING FOR CONTROL VALVE MANIFOLD /CYLINDER HEAD MULTIGAUGING

- = Multiple Bore can be Checked at same time



MGPL ADVANCE MEASUREMENT

ACOUSTIC RESONANCE TESTING (ART)

- = Crack Testing
- = Damping
- = Natural Frequency
- = Microstructure
- = Nodularity
- = Hardness

Applications :

- = Casting
- = Powder Metal
- = Forming



CYLINDER HEAD GAUGING

This Gauging is offered in India by MGPL along with M/s Rudolf Nieberding Germany

SOLUTIONS TO CHECK

- = Concentricity of the guide bore w.r.t. valve seat
- = Leakage
- = Angle
- = Roundness
- = Depth
- = Straightness



MGPL Introduces “**Icon**”

MIKRONIX GAUGES PVT. LTD. (MGPL) one of the Leading BRAND in the field of precision dimensional measurement is introducing “Icon (Eyecon) Brand of non contact gauging solutions. Vision-based measurement machine leverages advanced sensor technology and telecentric lenses to deliver highly accurate and repeatable results. Designed for modern industries, it supports precision measurement applications, defect detection, and quality control in dynamic production environments.



Shaft Measurement

Model	Dia Range
Icon DL 40x300	40
Icon DL 65x500	65
Icon DL 120x700	120
Icon DL 120x1000	120

Shaft Measurement (Only for OD)

Model	Dia Range
Icon D 30	30
Icon D 65	65
Icon D 120	120

Parameter	Specifications
Technology	High Precision Non-Contact Measurement Technology
Diameter Range *	5 mm to 120mm
Length Range *	up to 1000mm
Diameter Accuracy *	$3 \mu\text{m} + D \{[(\text{mm})/100] \mu\text{m}\}$
Length Accuracy *	$5 \mu\text{m} + L \{[(\text{mm})/100] \mu\text{m}\}$
Dia. Repeatability	$\leq 0.003 \text{ mm}$
Length Repeatability*	$\leq 0.005 \text{ mm}$
Measurement Speed	Depends on set up
Applications	Shafts, Precision parts
Software Interface	Easy to use , programmable , Can be connected to Scanner, Further operations etc.
Environment Compatibility	Clean parts essential input, Clean environment
Key Features	Non contact
Ease of Calibration	Easy & Manual

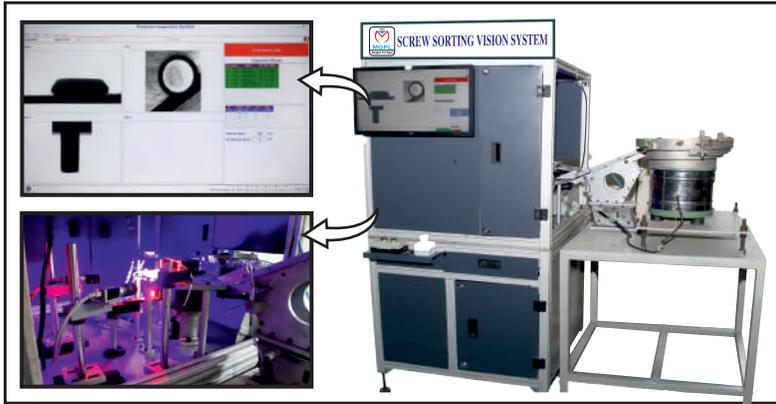
* Differs from Models to models and part type *

Features :

- = High Accuracy
- = High-Speed Processing
- = Robust Build
- = Seamless Integration
- = User-Friendly Interface

CON range of solutions offers fast, reliable solution for sorting OK/NG parts from fasteners family like Screws, Bolts, Rivets and variety of small parts.

Various combinations like Number of Cameras, Steel Disc/ Glass Disc etc. is offered to customer after listening to customer and defining primary objectives of adapting MGPL's **CON** solution.



Applications

- = 1) Fasteners / Rivets sorting machine.
- = 2) Precision turned parts /press parts /brass parts sorting machine.

Size of Machine	800x800x1750 mm	
Components Range	Dia.	Length
SD410-60 (Steel Disc)	04-10 mm	up to 60 mm
SD1016-100 (Steel Disc)	10-16 mm	up to 100mm
GD530-50 (Glass Disc)	05-30 mm	up to 50 mm
No. of cameras *	Normally 2 to 5	
Speed *	from 200 -500 parts/min.	
Accuracy *	From +/-0.015 mm onwards	
Requirements	Powe : 230V	Air >= 4 Bar
Appx. Power consumption	2.5 KWH	
Appx. Air consumption	1.5 CFM	
warrantee	1 year	
* Differs based on models , parts , dimensions to be measured *		

OUR LAB

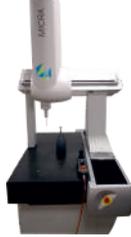
Roundness



Trimos



CMM



Metroscope



Laser Marking Machine



SUB Zero



OUR WORKSHOP





Unit-1



Unit-2



Unit-3



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