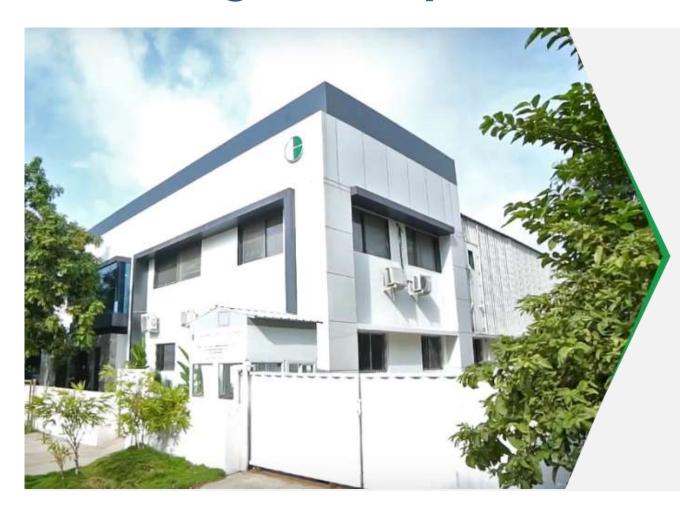
## Corporate Profile 2021

Achieve zero internal rejection. Supply direct to line.

Partners to improve COPQ and COQ through automated dimensional inspection solutions for precision gears & transmission shafts



# **Enabling 100% quantified inspection**



80% of India's largest Gear Exporters are our customers	<b>30%</b> of Customers with 5+ Equipment
<b>90%</b> Customers with repeat orders	<b>30 Lac+</b> Gears inspected annually



### WHAT WE DO?

Create 'quality' culture. Make 'quality' absolutely easy to measure, inspect and improve.

### BY 2025...

We will bring technology driven 'quality improvement' in 500+ Companies



### **Our Journey**

2010 Productise Quality

PIONEER in 'solutions' for gear quality inspection 2012 Ever evolving

Continuous INNOVATION in line with evolution of transmission technology 2016 Breakthrough

100% BETTER REPEATABILITY than CMM; Cycle time reduced from 30 m to 30 s 2017 High Precision

REPEATABILITY less than ±3 micron for TCE/ TTE – the only Indian product INDUSTRY 4.0 Machines, advanced software for analysis – with MES

2020

**INDUSTRY** 

4.0



# Towards 100% quantified inspection...

Transmission	Manual	Automatic	<b>Electric Vehicles</b>
Technology	Reducing market share phase-out in the long-term future	Growing at CAGR of 30% to 45% for top Automotive Manufacturers in India	Expected to peak by 2030; Majority share in 4W; Horizon sector
Gear	DIN 9	DIN 8	DIN 4
Properties	Acceptable for noisy IC engines, manual transmission	Critical for Gear noise reduction, ease of shift and durability, Strength	Highly precise & accurate processes gear grinding; Noiseless transmission for EVs
Gear	Gears	Aggregates	Exports
Manufacturers	Gear manufacturing as per OE/Customer requirement	Gear Box Manufacturing; R&D Proprietary products	Serve the needs of export- market for global OEMs, high- end gears
Gear	Spur	Helical	Planetary
Туре	Significant segment shifts gear types to reduce noise, maintenance	Even Tractor manufacturers shifting to helical gears	Stringent performance requirements in automotive and non-automotive gears



# 100% inspection – No more 'Optional'

Your Gear	Manual	Motorised	Software Driven
Inspection?	A majority of manufacturers using Manual Testers; Human dependency	Significant majority does not capture data for traceability, doubts about accuracy; Human dependency	Fully-automated, traceable, intelligent, upgradable and data driven solution

Your benefits: Upgrade to 100% automated, quantified and software driven inspection

- Eliminate human judgement and dependency
- Eligible for export opportunities
- High reputation among clients
- Total confidence with process conformance; zero errors
- Complete traceability
- Significantly lower costs and wastage
- Headcount optimization
- Process and quality improvement with exact analysis of each parameter

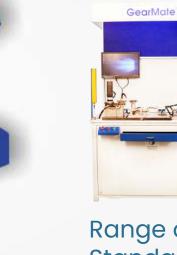


# Pioneering fullyautomated Inspection

#### **Most Advanced Features**

- Measures DIN 4
- Multiple gears, multiple parameters on a single machine
- Remote diagnostics, Data logging, IoT
- Fully-Automated, error free
- Robot Cell Integration

- In-process
  Gear
  Inspection
- Final Gear Inspection



Range of Standard Gear Inspection Systems



Tailor-made Projects built as per Client requirements



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#### Gears Inspected on our Machines are used by leading OEMS













Mercedes-Benz



**\$** SUZUKI





Ready to accept your Challenges!



### Automating the nonautomated in inspection

Total Automation – including pick and place, QR/Bar Code integration, Data logging, Analysis and more...

# Root-cause identification for quality improvement

Graphical representation of abnormalities for process quality control and prediction of root causes Our Value Adds; 20+ Innovations every year

### Capturing quality for 'difficult to measure' parameters

Quantify and capture subjective parameters such as jerky rolling; adding new parameters every 6 months

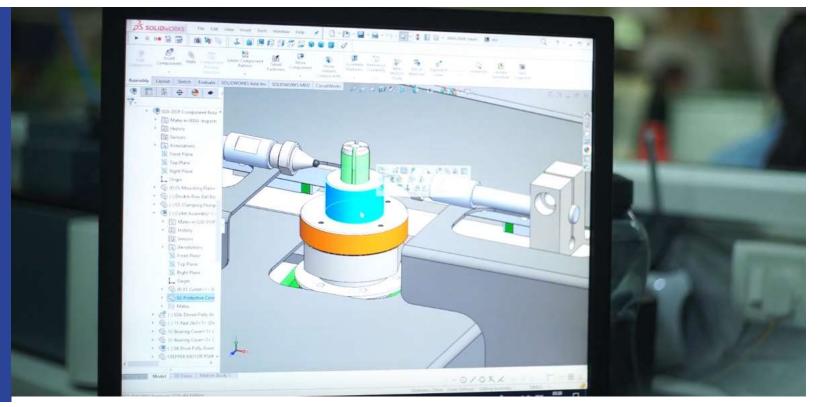
# Adding intelligence to your processes

Quantifying to catch the defect in gear quality issues or meet customer requirement



# Design: In-depth and continuously improving to address even unforeseen needs

- Design verification audit
- FMEA of the design
- Mathematical assessment of life of components
- Document storage, versioning and archive as per global standards





# Mechatronics capabilities: Unique value embedded in hardware + software

- Dedicated Mechatronics Team
- Programming planning, & Validation with updates
- Critical programming trials
- Monkey jumping to identify bugs
- Online resolving of issues





# Project Management: Transperent process; prompt response; on-time delivery

- Daily capacity & project road maps monitoring
- Project progress mailed to customer
- Conference calls with customer for clarity in technicalities
- Periodic checks for manufacturing guideline customer specs & design audit actions





# Customer Support: Only company in our league with 24X7 Telephonic Support

- Dedicated and experienced team of Factory Trained Engineers
- Remote Maintenance and Hardware/Software Upgrades
- Operator Training
- 24X7 Telephonic support (India's first)
- AMCs





# Why Calibromeasure?

99.99% Automation Success Rate

- Automation for automotive, nonautomotive gears
- Solutions to inspect Over 15+
   Parameters in gears

Industry's best Experts

### Future Ready Gear Inspection

 'Lean' philosophy embedded in every process that we follow and every product we deliver

 Industry 4.0, SPC, Traceability, Controls, Ergonomics and lean – we are flexible and future ready



# Final Gear Inspection



GearMate

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Achieve drastic manpower reduction in final inspection, achieving zero PPM rejection

High repeatability  $\pm 3\mu$  and accuracy within  $1\mu$ 

Inspect any CTQ parameters along with TCE/ TTE inspection



## In-Process Gear Inspection



RollSmart



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Monitor process trend in real-time for inprocess gear inspection

Quantified TTC, TTE readings!.

Rolling skills not required – Auto rolling!

Ok/ Not Ok decided by Machine!

Setting time- within a minute! CalibroMeasure Equipments Pvt Ltd

# Project: Automated Inspection solution for highly precise EV Gears

- Repeatability of +\_1 Micron
- 3 Stations
- TCE & TTE Runout
- Simultaneous inspection of gears









## **Connect with us**



G-39/7/2, MIDC, Waluj, Aurangabad, Maharashtra, India

+91 98220 32062



sales@calibromeasure.in



www.calibromeasure.in



