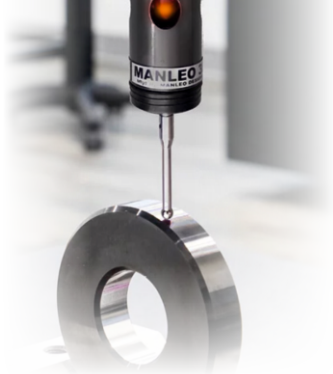
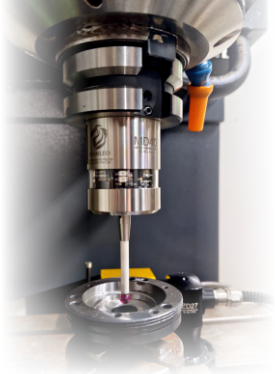
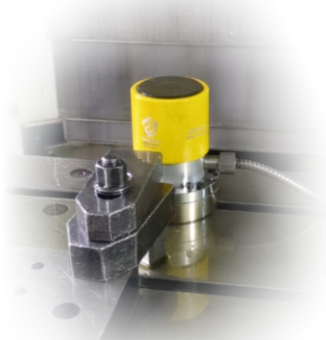




MANLEO
CHASING MICRONS



WHY PROBING IS NEEDED?

Probing is when an automated highly accurate device is used for work and tool measuring / referencing in CNC machines.

- Increase productivity by 12% with your existing assets
- Improve Precision and Consistency
- Increase automation
- Enhanced confidence to take on more complex work
- Continuous Quality Improvement

**SETTING
REWORK
REJECTION**



- 75% Reduction in rework
- 90% Reduction in scrap
- Zero downtime
- Reduce your total cost of ownership
- Reduce dependence on skilled resources



Manleo Designs is the only made in India company that designs and manufactures 3D precision Touch probes and Tool setters for CNC Machines

Our Vision is to empower India's machining industry to scale globally, delivering high - precision CNC machining at competitive prices, making India the top choice for precision engineering on the world stage

- India's only probe maker even after 25+ years
- 1200+ Customers Pan India
- In-House R&D, Design and Production
- Spread across India dedicated for Sales & Application

Why MANLEO ?



SERVICEABLE

Manleo provides service and support for its product irrespective of condition of damage of Probes and Tools Setters



DURABLE

Enjoy extended useful life of 5-10 years due to our service assurance & support. As a CNC owner, you are assured of peace of mind when you invest in Manleo Probes



AFFORDABLE

In comparison to Alternate probe brands we are half their cost



RELIABLE

Reap quick ROI of less than 2 months, and hence get 3x-4x return on your investment due to rework, rejection reduction & productivity improvement



HIGH CUSTOMER SATISFACTION

Manleo prides itself on high customer confidence
30 days money back guarantee

MD40 High Precision IR Touch PROBE

**FULLY AUTOMATIC HIGH ACCURACY
PROBE FOR VMC, HMC, VTL & CNC**



- ◆ Stable and reliable running process of the probe
- ◆ No abnormal alarm
- ◆ IP68 Long Trigger Life
- ◆ Ultra low power consumption

- ◆ The receiver is installed without the need to punch holes in the wall of the machine.
- ◆ Receiver installation direction adjustment and movement are convenient and quick.



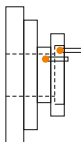
- ◆ Using ultra-precision micron-level assembly process.
- ◆ Probe comprehensive sensitivity <1um.
- ◆ Multiple Stylus options available

MD40 High Precision IR Touch PROBE

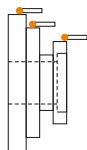
**FULLY AUTOMATIC HIGH ACCURACY
PROBE FOR VMC, HMC, VTL & CNC**

Range of macro operations in CNC - with Auto wear offset

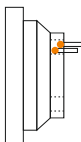
Internal Dia



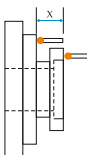
External Dia



Face Groove



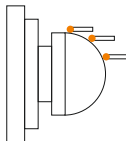
Z Depth



Groove Depth



Curvature Reference

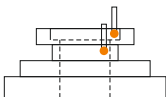


MD40 High Precision IR Touch PROBE

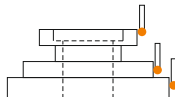
**FULLY AUTOMATIC HIGH ACCURACY
PROBE FOR VMC, HMC, VTL & CNC**

Range of macro operations in VTL - with Auto wear offset

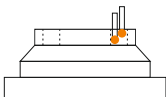
Internal Dia



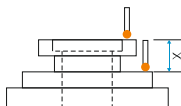
External Dia



Face Groove



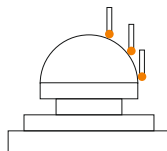
Z Depth



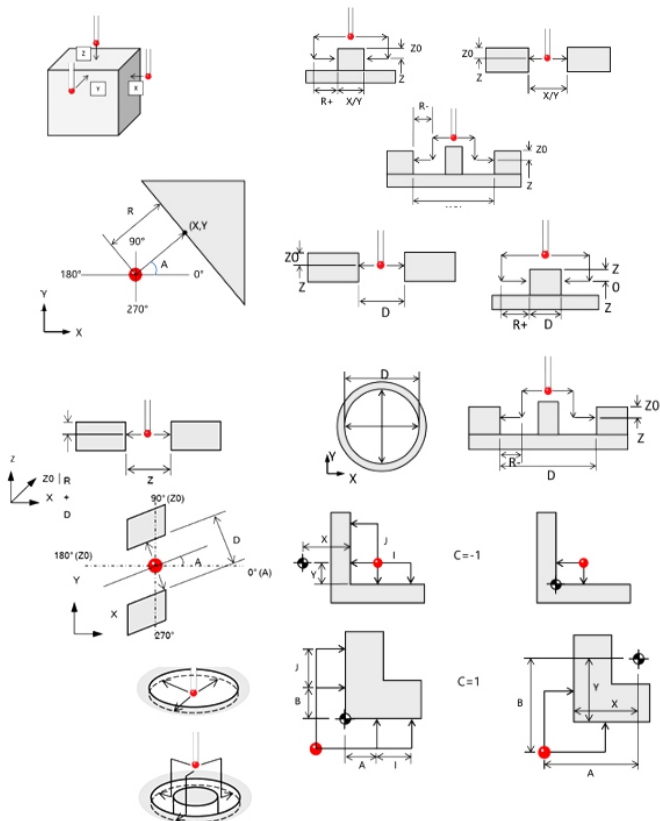
Groove Depth



Curvature Reference



Range of macro operations in VMC/HMC



Variants: MODULAR PROBE EXTENSION



RADIO SIGNAL
PROBE
WITH STAR STYLUS

300MM
EFFECTIVE
LENGTH



- Up to 600mm Extension available
- Comes with Star stylus

3D DATUM FINDER



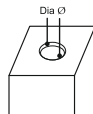
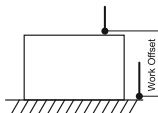
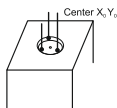
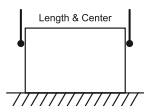
Application

- Datum & job reference
- Bore & Boss Centering
- Mill drill depth
- In Machine profile checking
- In Machine dimension checking
- ATC compatible
- Angle reference

Technical Specifications

- Stylus sensing direction : $\pm X, \pm Y, +Z$
- Stylus sensing over-travel : $X-Y \pm 15^\circ, Z +10 \text{ mm}$
- Unidirectional repeatability(2σ) : $\leq 2 \mu\text{m}$

All shanks supported (BT, CAT, HSK, SK, DIN, MT)





MANLEO
CHASING MICRONS

CP 25

Contact probe 25mm for
grinding application

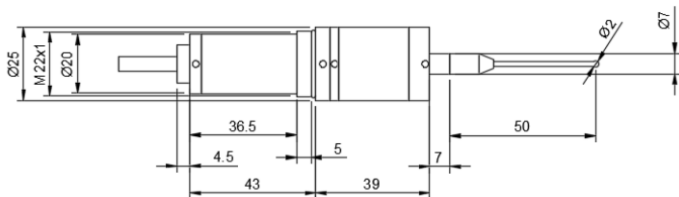


Product Application

- It can be used in a variety of special applications, such as
- Highlight machine.
- Tool grinder.
- Plane grinder.
- Outer round grinding machine.
- Lathe and other special machine tools to carry out special measurement tasks.

Product Parameter

PARAMETERS	VALUES
Accuracy	2 σ 1 μ m measured speed F=300
Trigger direction	$\pm X \pm Y -Z$
Maximum needles swing angle / axial concession length	X-Y: $+15^\circ$ Z: -5MM
Main body diameter	25mm
Measurement speed	300-2000mm/min
Power Supply	DC 15-30V
Material - Body	SS 316
Weight	310g (including 5 m wire)
Temperature range	10°C-50°C
IP Rating	IP 68
Trigger life	> 8 Million times
Cable	5 Meter
Outout mode	NC (normally closed) / NO (normally open)



STYLUS

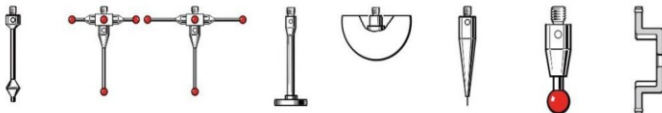
Ball/tip mat'l	carbide	carbide	ruby	carbide	ruby	ceramic	ruby	ruby	ruby	ruby	ruby	ruby	ruby	ruby	ceramic	ruby	ceramic
Ball/tip diameter D1/mm	0.5	1.0	1.0	2.0	2.0	7.4	2.0	3.0	3.0	4.0	5.0	5.0	6.0	6.0	7.4	6.0	7.4
Stem mat'l	carbide	carbide	carbide	carbide	ceramic	ceramic	carbide	ceramic	carbide	ceramic	carbide	ceramic	carbide	ceramic	ceramic	ceramic	ceramic
Length L1/mm	10.0	20.0	20.0	20.0	20.0	30.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	100.0	100.0
Stem working length L2/mm	5.0	10.0	10.0	10.0	10.0	30.0	40.0	40.0	40.0	40.0	35.0	35.0	35.0	35.0	50.0	85.0	100.0



Ball/tip mat'l	ruby	ruby	ruby	ruby	ruby	ruby	ruby	ruby	ruby	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre
Ball/tip diameter D1/mm	4.0	5.0	6.0	4.0	6.0	6.0	6.0	6.0	6.0	3.0	3.0	3.0	6.0	3.0	6.0	6.0	6.0
Stem mat'l	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre	c-fibre
Length L1/mm	30.0	30.0	30.0	50.0	50.0	100.0	150.0	200.0	40.0	50.0	70.0	80.0	90.0	100.0	150.0	200.0	
Stem working length L2/mm	25.0	25.0	25.0	40.0	40.0	85.0	135.0	185.0	40.0	50.0	70.0	80.0	90.0	100.0	150.0	200.0	



Spindle stylus	18mm star stylus	30mm star stylus	Disk stylus	Hemispherical stylus	Ruby mini stylus	Carbide stylus	Bow Stylus
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OPTO-Z Neo

AUTO TOOL Z SETTER



Application

- Ø 1mm Tool measurement
- Auto Tool Length reference
- Auto Tool tip breakage
- Auto Tool Wear detection
- Non-conductive tools can be measured
- 45mm large top plate for taking up to 40mm any tool without rotation to prevent tool chipping

Technical Specifications

- Stylus sensing direction: +Z
- Stylus sensing over-travel: Z + 5mm
- Unidirectional repeatability (2σ): $< 2 \mu\text{m}$
- Controllers: Fanuc, Siemens, Mitsubishi & Haas.
- Other controllers' macro cycles can be developed on machine availability

OPTO-Z20 Neo

AUTO TOOL Z SETTER

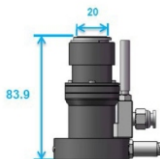


Application

- Ø 1mm Tool measurement
- Auto Tool Length reference
- Auto Tool tip breakage
- Auto Tool Wear detection

Technical Specifications

- Stylus sensing direction: +Z
- Stylus sensing over-travel: Z + 9mm
- Unidirectional repeatability (2σ): $< 2 \mu\text{m}$
- Controllers: Fanuc, Siemens, Mitsubishi & Haas.
- Other controllers' macro cycles can be developed on machine availability



OPTO-Z 10 *mini*

AUTO TOOL Z SETTER

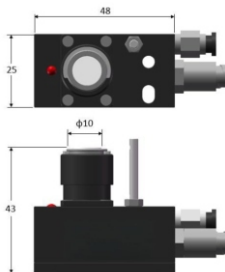


Application

- Ø 0.1mm Tool measurement
- Auto Tool Length reference
- Auto Tool tip breakage
- Auto Tool Wear detection

Technical Specifications

- Stylus sensing direction: +Z
- Stylus sensing over-travel: Z + 5mm
- Unidirectional repeatability (2σ): $< 2 \mu\text{m}$
- Controllers: Fanuc, Siemens, Mitsubishi & Haas.
- Other controllers' macro cycles can be developed on machine availability



ZD 27

3D tool setter for Z and Dia offsets of Tools
Cable Tool Setter



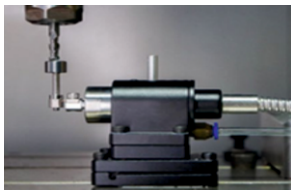
Application

- Used in VMC, HMC, CNC, VTL
- Z Measurement
- Dia Measurement
- Tool Breakage
- Tool Runout Monitoring

Features

- Waterproof IP68
- Z - 1 micron accuracy
- Diameter - 2 micron accuracy
- Controllers: Fanuc, Mitsubishi, HAAS, Siemens
- Contact life 3 million cycles

HIGH ACCURACY DIAMETER & TOOL LENGTH SETTTER



■ Measure Tool Length

Automatically measure and update tool length, and tool wear compensation



■ Measure Tool Diameter

Automatically measure and update tool length, and detect tool breakage.



■ Air Nozzle

The air nozzle provide compressed air to clean the tools and touch pad before measuring, ensure the stability of measurement accuracy.



■ Easy Installation

The unique adjustment structure makes the horizontal adjustment easier and the adjustment accuracy and efficiency higher.



■ Anti-collision Design

Unique brittle insert design protects the sensor from being damaged by the collision machine.



■ IP68 Protection Level

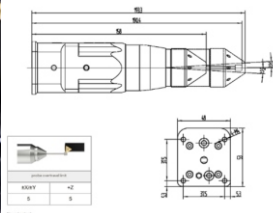
Probe protection level is the highest IP68 rating in the industry.

LT 25

3D tool setter for CNC, VTL

The LT25 tool setter is compact, robust, and designed for the extremely harsh machining environments of lathes and multi-machine tools. Featuring several innovative design characteristics, the LT-25 tool setter ensures accurate and reliable tool measurement, helping to reduce scrap rates, improve quality, and increase output.

Quickly measure turning tools, parting tools, grooving tools, threading tools, and boring tools. Also tool wear and thermal deformation

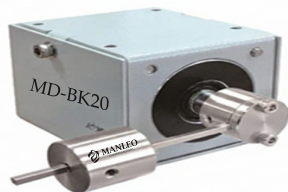


Technical Highlight

Transmission type	Hardwired	
Signal control panel	H-IF35	
Weight	1250 g	
Cable length	10 m	
Sensing direction	$\hat{A} \pm X, \hat{A} \pm Y, +Z$	
One-way repeatability	2.00 μm 20 (see note)	
Contact measurement force,	XY plane (low force measurement) 0.49 N, 50.25 gf XY plane (high force measurement) 0.90 N, 92.21 gf +Z direction 6.79 N, 692.88 gf	
Gas supply operating pressure	Maximum 5.0 bar Minimum 2.5 bar	
Pneumatic joint	1 unit (extend, retract and optional blowing assembly)	
Install	M4 x 50 mm length	
Protection level	IP68	

MD-BK20

Offline Tool Breakage Sensor



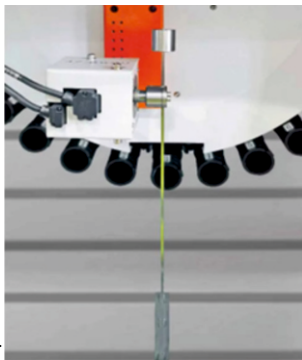
Designed for CNC machine tool magazines, the MD-BK20 automatically detects tool breakage after every cycle-inside the magazine, without occupying any machining time. It is precise, waterproof, dustproof, and built for round-the-clock automated production environments.



MD-TMR system: driver controller + detector probe + tool holder

Key Highlights

- Sensing accuracy < 0.5 mm - High-precision encoder catches even micro-breakage.
- Detects tools from 0.2 mm diameter upward without damage.
- Tool length detection range up to 400 mm.
- Over 10 million cycle detection lifespan.
- Zero machining time used - detection inside magazine.
- Compatible with FANUC, Siemens, Mitsubishi and all major CNC brands.
- Supports up to 255 tools (unlimited with PLC).
- Touchscreen HMI for easy setup and debugging.
- IP-rated: unaffected by coolants, mist & chips.



MD-BK20

Offline Tool Breakage Sensor



■ Extremely Fast Detection

Completes tool breakage detection within 2 seconds -results are available before the next tool is loaded.

■ Low Detection Force - Tool Safe Approach

deceleration and automatic unloading prevents tool damage. Measures tools as fine as 0.2 mm diameter.

■ Easy Installation & Touchscreen Setup

Compatible with a wide variety of tool magazines. Supports touchscreen HMI for parameter configuration without PC.

■ High Precision Encoder

Sensing accuracy below 0.5 mm ensures reliable detection of even partial breakages and worn cutting edges.

■ Zero Machining Time Consumed

Detection happens inside the tool magazine. Your spindle keeps running; no cycle time is lost.

■ Unaffected by Coolant & Chips

Waterproof and dustproof construction ensures reliable detection even in high-pressure coolant environments.

■ Simple Operation

Teaching data is stored immediately on first use. Supports repeated teaching, averaging, and one-click data clearing.

■ Large Detection Range

Detects tool length differences up to 400 mm suitable for everything from micro drills to large end mills.

MLTB

Manleo Laser Tool Breakage

MLTB uses our proprietary MLTB (TS) waveform recognition algorithm to assess tool condition with unmatched speed and accuracy - immune to coolant, chips, and vibration.



IN-PROCESS WORKFLOW



Drilling / Tapping Operation
CNC Cycle executing



MLTB Inspection
Waveform analysis



Tool OK - Continue
Proceed to next operation



Tool Broken - STOP
Alert + auto

01

Tool Enters the Laser Beam Zone

The cutting tool moves into the MLTB laser field. The system captures reflected light data immediately as the tool rotates at full spindle speed.

02

MLTB Waveform Analysis

The proprietary MLTB (TS) algorithm analyses the reflected laser waveform - delivering far superior accuracy over simple beam-blocking methods. Immune to coolant and chips.

03

Signal Output & Automatic Response

"Tool Normal" - machining continues immediately. "Tool Broken" - machine halts and automatic backup tool is deployed - no manual intervention required.

<1ms

**DETECTION
SPEED**

3mm

**ABOVE TOOL
TIP**

1

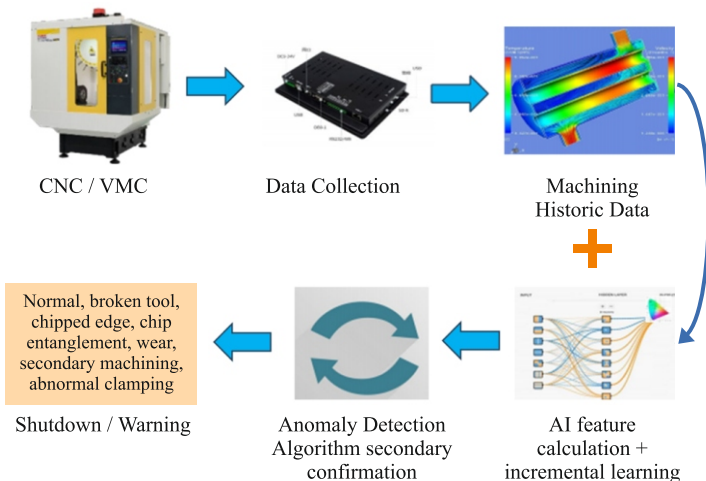
**UNIT
NO ALIGNMENT**

0

**PHYSICAL
CONTACT**

MANLEO INTELLIGENT TOOL MONITORING

Tool Monitoring Solutions



MANLEO INTELLIGENT TOOL MONITORING

Tool Monitoring Solutions

Useful in high production, robotic setups or one operator multi machine setups where system is monitoring the tools cutting characteristics and behaviour.

Systematic view of Tool Monitoring



System Interface for Efficiency Optimization, Tool Monitoring, and Spindle Protection:

Information Prompt:
Display the latest information

1. Click the button to enable/disable tool monitoring.
2. Press and hold the button to configure tool options and browse tool data.

NOTE: Optimization Summary: Standard time 524 seconds, actual time 436 seconds, saving 88 seconds, efficiency improved by 20%.

01201	T1- Roughing	180s	Low wear mode	Turn on	ON
01202	T2-Precise milling	6 s	Size Optimization	Pause	ON
01205	T5-Drilling	335s	Tool Longevity Optimization	Broke n tool	ON
01206	T6-Tapping	3 s	Close	Turn on	ON
Operations	Tool system configuration	Statistical info	Optimized Execution	Tool Monitoring	Collision Protection

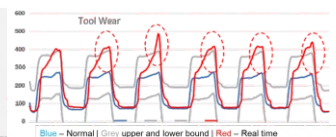
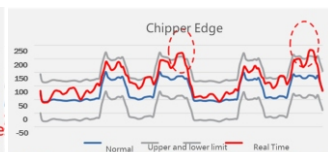
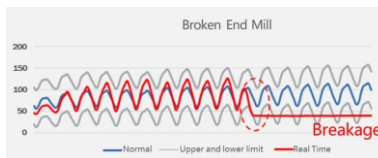
Tools that do not require monitoring can be turned off individually.

Tool breakage alarm will trigger, simultaneously stopping the machine.

You can press and scroll through pages

1. After systematic study, comprehensive information on programs, tools, and time can be obtained.

1. Global settings: Click to enable or disable all
2. Long press to configure blade breakage information and alarm trigger mode



MANLEO SPINDLE COLLISION SYSTEM

Tool Monitoring Solutions

Spindle collision:

During CNC operation, collisions between the spindle and the workpiece or fixtures may occur due to factors such as machining programs, parameters, fixtures, or human error, potentially compromising spindle accuracy.



MANLEO SPINDLE COLLISION SYSTEM

Tool Monitoring Solutions



Manleo's Collision Protection System

Mount the vibration sensor near the tool installation point close to the spindle to capture the clearest vibration details.

Instant collision signal detection (currently capable of collision detection within 0.2ms)

Real-time shutdown protects cutting tools, tool holders, spindles and workpieces.



Prevent your machine from expensive crashes!!!

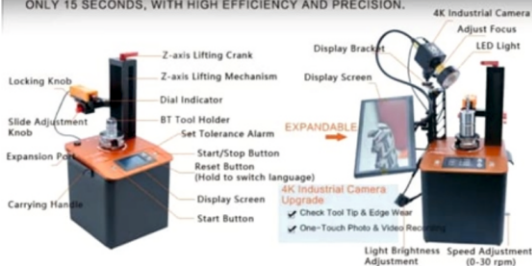
MANLEO TOOL RUNOUT SYSTEM

Tool Runout Solutions



AUTOMATIC TOOL RUNOUT GAUGE USAGE DIAGRAM

ONLY 15 SECONDS, WITH HIGH EFFICIENCY AND PRECISION.



User Instruction



1. Connect to 12V power → Press ① [Power] to turn on
 2. Press ② [Start/Stop] → Tool holder rotates → Observe runout → Press ③ [Reset] for repeated measurements
 3. Double-click ④ for tip alarm setting → Tap ④ to increase by 0.005 → Hold ④ to save | Hold ④ for holder alarm setting → Tap ④ to increase by 0.005 → Hold ④ to save
 4. Press ④ [Reset] to clear data → Ready for new measurement
- Note: "⊠" indicates measuring; "•" indicates value locked.

MANLEO TOOL RUNOUT SYSTEM

Tool Runout Solutions

COMPARISON



Just **3** steps needed

1. Insert into the handle of the knife
2. Move the probe to the handle /blade tip
3. An alarm will sound if the knife position exceeds the preset value.

★ **15 Seconds is all it takes for the entire process.**



It requires **7** steps

1. Remove tool holder
2. Disassemble collet
3. Reinstall collet
4. Install tool
5. Tighten nut
6. Install in machine
7. Check runout with indicator.

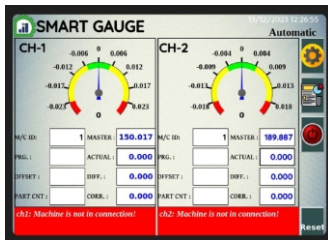
If the accuracy does not meet the standard, repeat all seven assembly steps.

SMART GAUGE

Measure the part, correct the machine - automatically.

A closed-loop, air-gauge-based system that gauges every part in-cycle and writes the wear offset straight back to your CNC.

No manual gauging. | No keypad errors. | No drift into scrap.



Auto Offset Correction

no Corrects tool wear on its own operator keystrokes, no typing mistakes.



Live & Historical SPC

On-screen run & X-bar charts track process drift, shift after shift.



Calibration Guard

Blocks production on any gauge that is past its calibration due date.



Machine Interlock

Halts the CNC the instant readings breach your control limits.



True Plug-and-Play

Connects to any CNC - Fanuc, Siemens, Mitsubishi and more.



Robot / Gantry Ready

Feeds offsets into automated cells for fast, lights-out running.



Multi-Level Access

Role-based passwords keep settings safe from tampering.



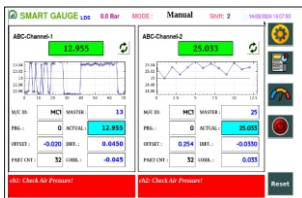
Custom Reports

Traceability & MIS reports built to your plant's format.



Multi-Machine / Channel

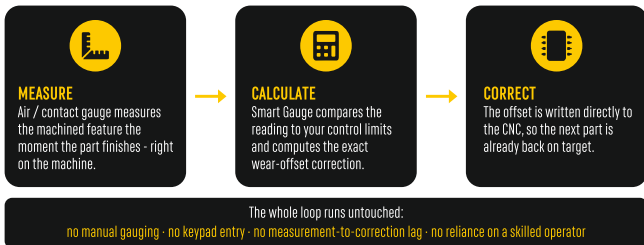
One system supervises several machines and features at once.



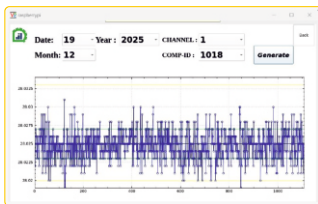
OFFSET SETTINGS

Tune correction step, damping and interlock thresholds per feature.

How it works - Measure - Calculate - Correct

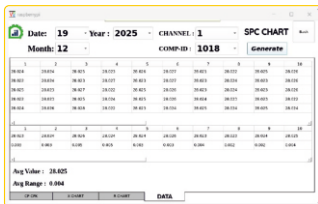


Live SPC - Catch Drift Before it Becomes Scrap



LIVE RUN CHART

Every gauged part plotted against control limits - trends are visible as they happen.



SPC ANALYTICS

Cp / Cpkand distribution data, online and offline, ready for review and reporting.

THE BUSINESS CASE ROI Calculator

YOUR INPUTS

Annual production (parts)	1,20,000
Scrap value per part	₹380
Scrap rate reduction	1.2% > 0.3%
Rework cost per part	₹110
Rework rate reduction	2.0% > 0.5%
Machine-hours recovered	180 hr x ₹650
Smart Gauge investment	₹3.9 L (indicative)

ANNUAL BENEFIT
per machine

₹8.1 L

PAYBACK PERIOD
cost recovered inside year one

~6 months

3-YEAR NET GAIN
after the one-time investment

≈ ₹20 L

RETURN ON INVESTMENT
on money invested

~2x yr-1 . ~5x/3yr

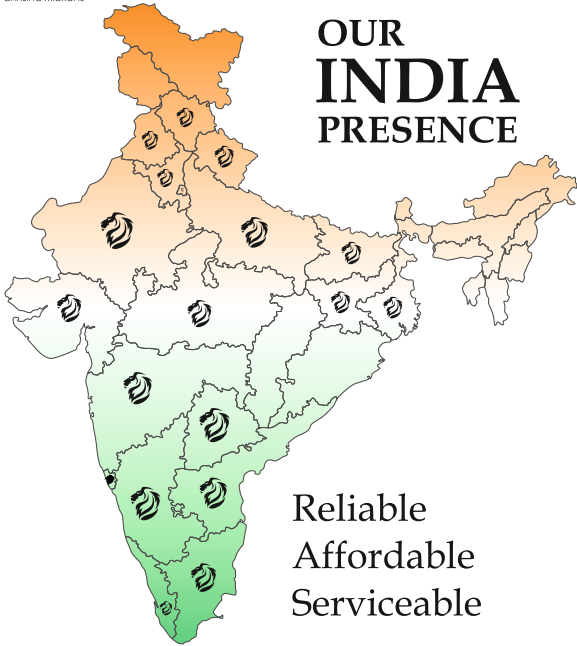
Payback (months) = System cost + monthly (scrap + rework + recovered - hours) saving

Replace these with your own part cost, volume and reject rates.

Micromatic







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