

Tool Inspector

Making Measurements
Error Free & Operator Free



Making Quality to Measure Quality

Established in 1971 SIPCON offers a comprehensive and superior lineup of quality Profile Projectors, Vision Measuring Systems, Industrial Vision Inspection Solutions and Coordinate Measuring Machines - the largest range in the world.

With a network of fully trained support team SIPCON provides full after sale service and support second to none. The name SIPCON stands synonymous with the ultimate precision quality and reliability



7 Patents Approved



7500 USERS *DELIGHTED*

All Across the globe

suttontools



V P Industries
Complete Tool Manufacturing & Reconditioning Services



MIRANDA TOOLS
Premium quality cutting tools



Samcarb TOOLS Pvt. Ltd.



KARVY TOOLS



5 POINT CUTTING TOOLS

HinaTools



BRAHMOSTECH



Choosing measurement system by ease of use

Measurement	Profile Projector	Vision Meas. System	Tool Inspector
END MILL			
Radial			
Rake angle	☹️	☹️*	😊
Primary clearance angle	☹️	☹️*	😊
Secondary clearance angle	☹️	☹️*	😊
Core diameter	☹️	😊	😊
Primary land width	☹️	☹️*	😊
Margin Width	☹️	☹️*	😊
Cutting Diameter	☹️	😊	😊
AXIAL			
Shank/Shaft Diameter	😊	😊	😊
OD (Cutting diameter)	😊*	😊*	😊
Helix Angle	☹️	☹️*	😊
Length of cut	☹️	☹️	😊
Flute length	☹️	☹️	😊
Overall length	☹️	☹️	😊
Gash Angle	☹️	☹️*	😊
Dish Angle	☹️*	☹️*	😊
Axial rake angle	☹️	☹️*	😊
Axial primary relief angle	☹️	☹️*	😊
Axial secondary clearance angle	☹️	☹️*	😊
Chamfer Angle	☹️*	☹️*	😊
DRILL			
Radial			
Chisel edge angle	☹️	😊	😊
Flute width	☹️	☹️	😊
Web or core dia	☹️	😊	😊
Body Clearance diameter	☹️*	☹️*	😊
Wedge angle	☹️*	☹️*	😊
S value	☹️*	☹️*	😊
Rake Angle	☹️*	☹️*	😊
AXIAL			
Cylindrical margin	☹️*	☹️*	😊
Height of point	😊*	😊*	😊
Point angle	☹️*	☹️*	😊
OD	😊*	😊*	😊
Helix Angle	☹️	☹️*	😊
Neck length	☹️	☹️	😊
Shank length	☹️	☹️	😊
Overall length	☹️	☹️	😊
Flute length	☹️	☹️	😊
Lip clearance angle	☹️*	☹️*	😊
Lip height	😊*	😊*	😊



Profile Projector



Vision Meas. System



Tool Inspector

☹️ Not Possible

☹️ Requires expertise

😊 Possible

* Require fixture & alignment plate

Factors to consider before purchasing Tool Measurement System:

- | | |
|--|----------|
| <p>1. Maximum tool length
X-axis in mm</p> | |
| <p>2. Maximum tool diameter to be measured
Y-axis in mm</p> | |
| <p>3. Minimum tool diameter to be measured
Magnification(0.7X-4.5X)</p> | |
| <p>4. Maximum radial dimensions to be measured in one shot
F.O.V (Area seen in one time)</p> | |
| <p>5. Minimum Tolerance in tools (ex. Reamer dia)
Accuracy(3+L/200) & Repeatability $\pm 2\mu\text{m}$</p> | |
| <p>6. Profile tools with drawing measurement
CAD overlapping</p> | Yes / No |
| <p>7. For measuring darker areas like Gashing, chamfers
Flexible spot illumination</p> | Yes / No |
| <p>8. Ball nose radius check with repeatable results
Edge Auto combine (while rotation)</p> | Yes / No |
| <p>9. Save /Transfer high resolution images
Camera based measuring system (CBPP/VMM/TOOL INSPECTOR)</p> | Yes / No |
| <p>10. For Visual inspections like chip offs
Max magnification from 18X-90X</p> | Yes / No |
| <p>11. Chisel edge/wedge angle
Ultra high or max mag at 90X</p> | Yes / No |
| <p>12. Helix/Clearance /Axial rake (Axial angles)
Perfect parallel alignment of tool
(click at 0° and 90° for parallel alignment)</p> | Yes / No |
| <p>13. Core dia/ flute width/rake angle (Radial Surface)
Surface Illumination</p> | Yes / No |
| <p>14. OD/Point angle/Shank dia (Outer Axial)
Back Illumination</p> | Yes / No |
| <p>15. OD/Axial rake/chamfer angle/dish angle
Tool concentricity fixture (Highpoint matching)</p> | Yes / No |
| <p>16. OD/Axial rake/chamfer angle/dish angle
Lock system with rotary fixture provides non offset rotation</p> | Yes / No |
| <p>17. Axial primary/secondary clearance/helix angle
Can match at tool centre in first radial position and then in axial position
in one shot with tool rotary system with 0 to 360 degree movement</p> | Yes / No |

Tool Inspector

SVI-TI-3D



Measuring Range

Std: X-Axis: 100mm; Y-Axis: 100mm;
Z-Axis 80mm

Big: X-Axis: 200mm;
Y-Axis: 150mm; Z-Axis 100mm

Resolution

0.001 mm

Accuracy

$(3+L/200)\mu\text{m}$

Repeatability

2 microns

Magnification

14X-90X

Working Distance

170 mm

Field of view

Max 18-Min 2.8mm

Max Tool Diameter

Std: 25 mm diameter with rotary fixture &
100 mm with V block.

Opt: 50mm with rotary fixture

Max tool Length

200mm

Camera

High Resolution 3/ 5MP

Rotary plate range

360°

Rotary Plate resolution

6"

Accuracy of Granite

Din Grade 0

Accuracy of the V block

Grade 1

Max Load Capacity

20 Kgs

Illumination

LED cold light

Illumination - Back

LED

12 Reasons to choose Tool Inspector

1. Measure axial and radial dimensions in matter of seconds
2. Advance video edge detection for speed and accuracy
3. High magnification (Upto 110X) for micro geometry and surface details
4. Before and after regrinding comparison by saving images
5. Easy alignment and positioning
6. High resolution lenses for sharp display of cutting edges in incident lighting
7. Bellows coverings for dust proof measurement and long life of machine
8. Mechanical fixed measuring angle of 0° & 90° are available on the rotary stage
9. 100 measurement parameters can be easily measured for tools including drills, endmill, reamers ,etc.
10. Every employee can measure any standard tool without requiring any specialized training
11. High accuracy encoder is embedded in the rotary table, offers precise angle location for users.
12. Multiple section programmable LED ring light for surface illumination, also including contour lighting and free angle auxiliary light for standard features.



More than 100 Measurement Parameters



End Mill

- 1 Axial primary relief angle
- 2 Axial rake angle
- 3 Axial secondary clearance angle
- 4 Concavity angle of end cutting edge
- 5 Core diameter
- 6 Corner
- 7 Cutting diameter
- 8 Cutting edge
- 9 Dish angle
- 10 End cutting edge
- 11 End gash
- 12 End teeth
- 13 Flute
- 14 Flute length
- 15 Flute washout
- 16 Gash
- 17 Gulet
- 18 Helix angle
- 19 Land
- 20 Length below shank
- 21 Length of cut
- 22 Overall length
- 23 Peripheral cutting edge
- 24 Primary clearance angle
- 25 Primary land
- 26 Rake angle
- 27 Rake angle gaging depth
- 28 Secondary clearance angle
- 29 Shank
- 30 Shank diameter
- 31 Shank flat
- 32 Side teeth
- 33 Tool height
- 34 Tool width
- 35 Web

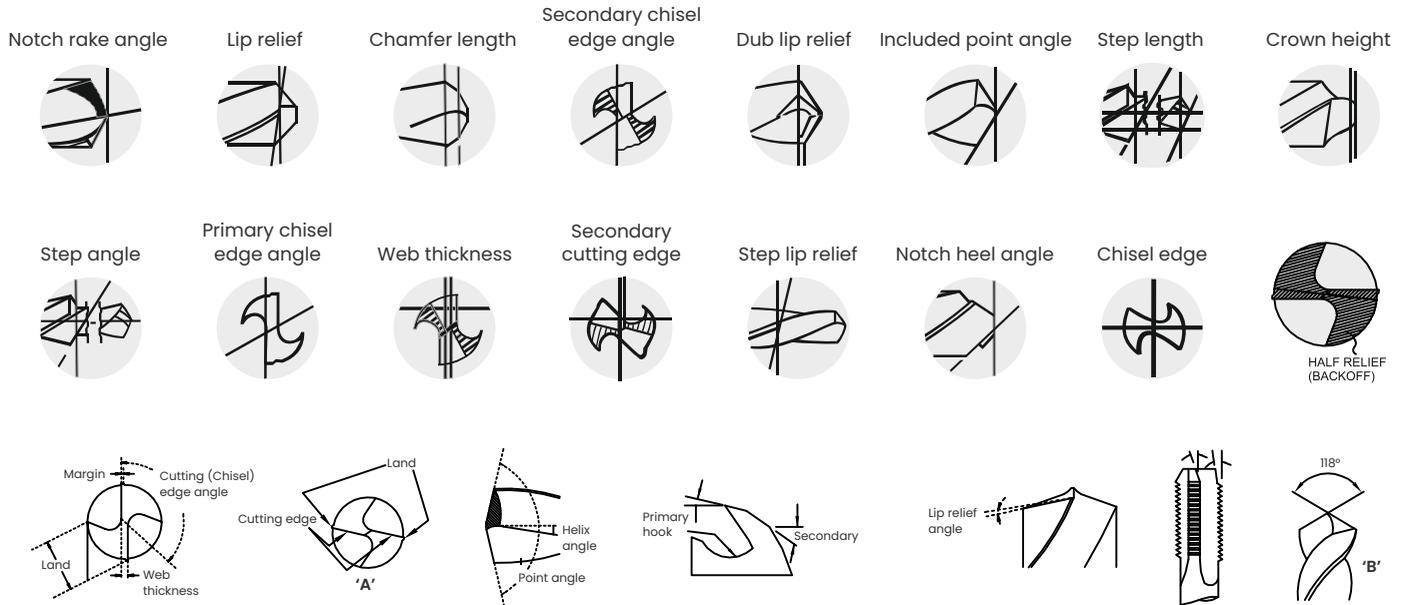
Drills

- 1 Body
- 2 Body Clearance
- 3 Body Clearance diameter
- 4 Chisel edge
- 5 Chisel edge angle
- 6 Cutting edge
- 7 Depth of body clearance
- 8 Drill diameter
- 9 Flank
- 10 Flute
- 11 Flute length
- 12 Flute width
- 13 Functional length
- 14 Height of point
- 15 Helix angle
- 16 Land width
- 17 Lead
- 18 Lip clearance angle
- 19 Lip length
- 20 Margin
- 21 Margin width
- 22 Neck length
- 23 Outer corner
- 24 Overall length
- 25 Point angle
- 26 Relative lip height
- 27 Shank length
- 28 Tang
- 29 Taper shank
- 30 Web or core thickness

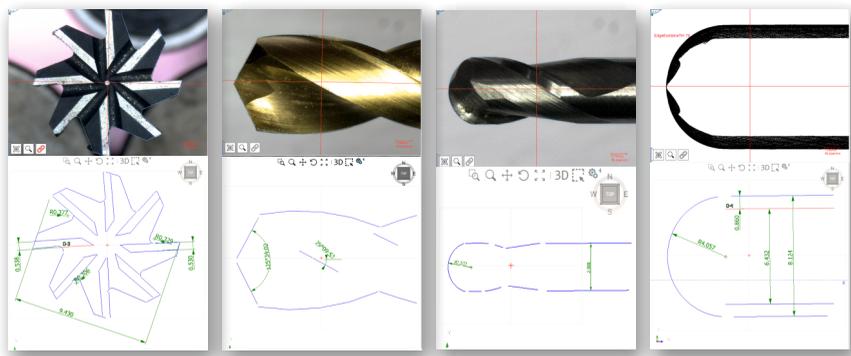
Reamers

- 1 Chamfer angle
- 2 Chamfer length
- 3 Chamfer relief angle
- 4 Cutting length
- 5 Flute length
- 6 Helix angle
- 7 Land width
- 8 Lead angle
- 9 Lead angle length
- 10 Margin
- 11 Neck
- 12 Overall length
- 13 Primary relief angle
- 14 Rake angle
- 15 Reamer dia
- 16 Secondary relief angle
- 17 Shank length

Fast & Accurate Measurement



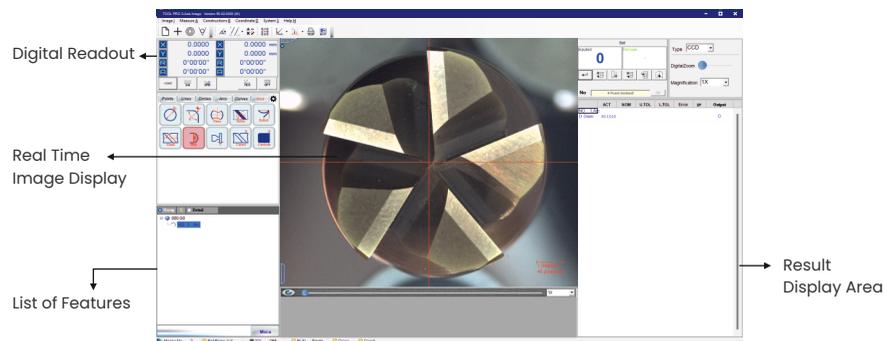
Patented Tools For Measurement



Tool Measuring Software

Tool Pro

Software Desktop



Basic Features

Distance

- Center to Centre
- X Distance
- Y Distance
- Land Width
- Step Distance X,Y

Angle

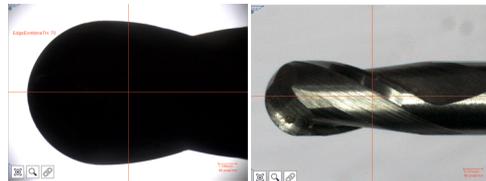
- X Axis
- Y Axis
- Included
- 180-L
- 180+L
- 360-L
- Drill Point Angle
- Helical Angle
- Rotational Angle
- Relative to X,Y
- Axis
- Gash Angle
- Rake Angle
- Ball Nose Taper

Radius

- Ball Nose Radius/ Dia
- Rotational Distance
- Radius

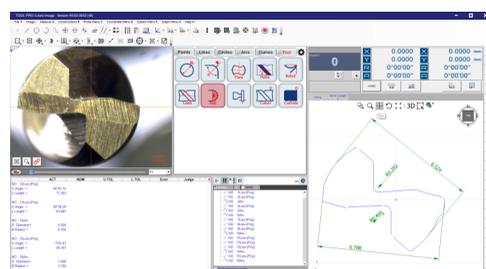
Light Control

Software capable of handling 4 channel light controller with programming capability for each channel i.e. intensity value for each channel source would be memorized in the program and would be repeated at the time of running. This can also be used to control the 4 Quadrant LED light controller.



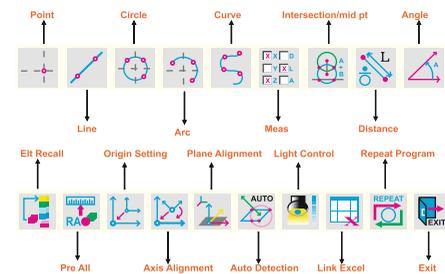
Data Management - Export

Option to save graphs as DXF or IGS files makes it possible to export our measurements to CAD and CAM for further editing. You can also "click" the features in the graph to calculate the measurements between the elements. For example to measure the distance between the 2 circles in the graph just click the distance button and then click the two circles from the graph. The result is on the screen.....



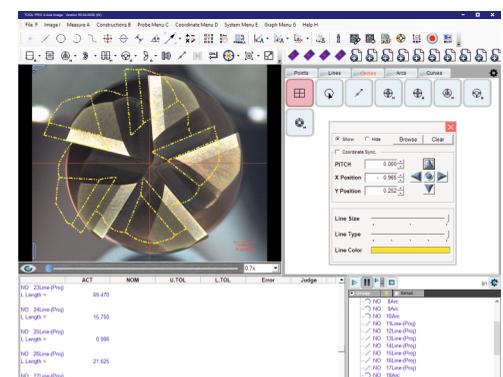
Click & Measure Top Menu Bar

One Click Menu bar for all geometric measurement origin setting, axis alignment, MS-excel output & Programming.



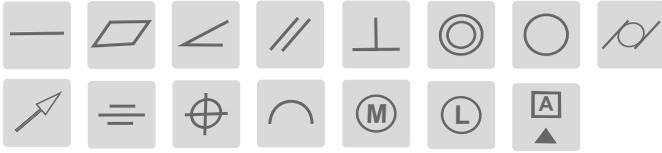
Overlap Comparison

Overlap your DXF files on the magnified image to quickly check weather the tool is within the tolerance or not.



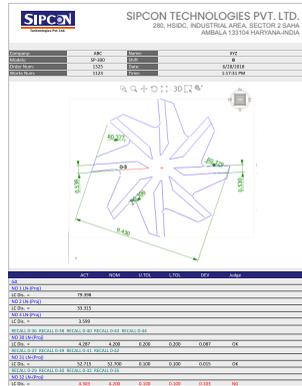
Tolerance Setting & Result Display

Supports more than 10 types of Tolerance setting including group Tolerancing (Circularity, Concentricity, Perpendicularity, Parallelism etc) and Result window will display all the results with tolerance values and will give an indication for PASS or Fail features.



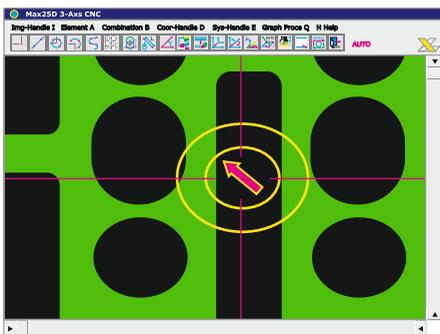
Report Generation

Customised report generation with color coded pass and fail, options to add the company logo , batch number, operator name, date and time etc. Image of measurement done is also the part of the report format.



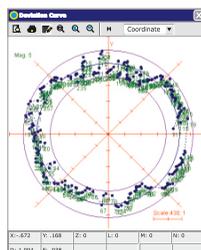
Programming & Navigation

Teach programs with one click and repeat those with the help of navigation Tool bar shown in the above picture. This navigation Toolbar guides you what features are to be measured and where is there exact location – Just press the mouse clicks and complete part will be measured . So just measure one part other similar ones would be measured automatically.



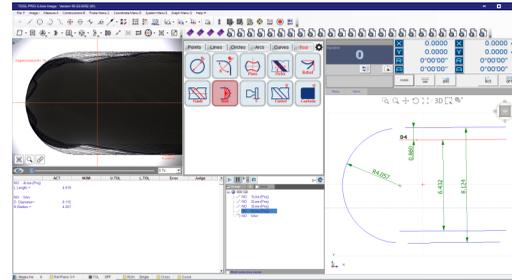
Deviation analysis of point data

This feature gives you the coordinates of the points taken on the element along with the form tolerance value of each point. This is very useful to analyze the irregularities on the feature. You can choose the type of result you want – Min, Max or Avg. Also you can have a print out of this report.



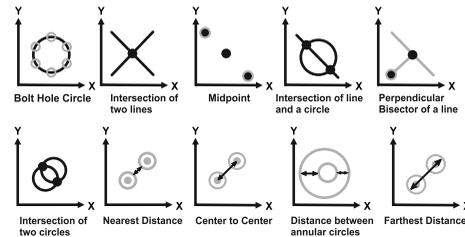
Patented Tools

Patented tools for ball nose radius calculations and high point calculation makes the measurement simple and accurate.



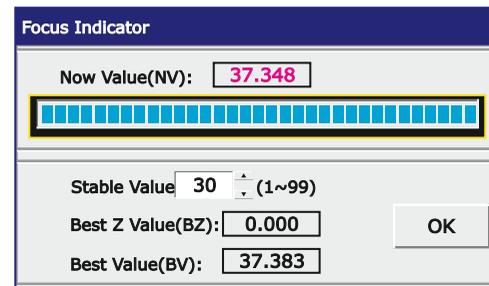
Construction Capabilities

Select two or more features to create intersections or constructions. This reduces operator effort by eliminating confusing construction menus.



Focus Indicator for accurate 3-D Measurement

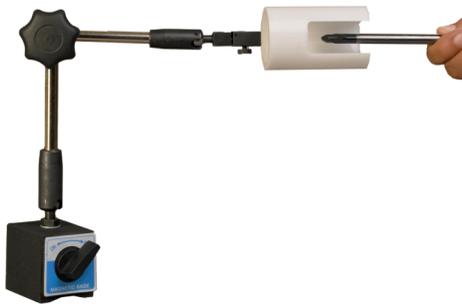
This will indicate the best focus value and the corresponding Z value to make sure focus is clear before measurement. A must to do for 3-D Measurement.



Accessories

Illumination Tube

Highly magnified small tool images will benefit from the customizable lighting controls associated with the illumination tube. The illumination tube assembly includes an adjustable articulating arm which connects to the base block for positioning.



V-Block

A 5" V block is supplied with SIPCON Tool Inspector model show ever longer V blocks are available for special applications.
10" V block for long tools.
15" V block for extra long tools.



Calibration Gauge



Concentricity Fixtures

The SIPCON concentricity fixture, provides a constant smooth part rotation that allows for easy and accurate measurements of the tool.

All precision concentricity fixture are certified to be accurate within 2microns the rollers.

The TOOL PRO software includes 9 Edge Detection calculations which require the use of a concentricity fixture. This accessory is ideal for customers that want to measure diameter or radius using the Edge Detection feature in the TOOL PRO software.



Concentricity fixture for small/microtools.
Shank/tool size range: (.25 - 6.5mm).



Concentricity fixture most popular.
Shank/tool size range: (3- 25mm)



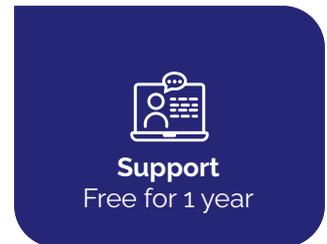
Concentricity fixture for larger tools.
Shank/tool size range: (9.5- 50mm).

Installation, Training & Online Support

Installation and Training is for all customers and usually takes place within 3 to 4 days of the delivery of the system at customer premises. Calibration is done free of cost after installation. Subsequent calibrations are required after every one year and are chargeable at per calibration.

We offer two type of support:

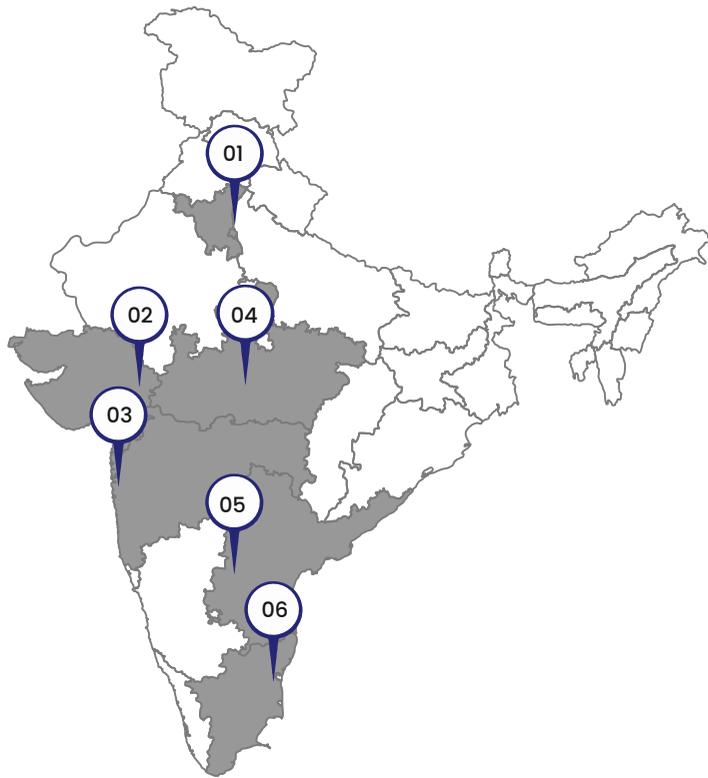
ONLINE & OFFLINE



Online support is free of cost throughout the life of the system and resolves 90% of the issues arising in system.



Indian Roots & Global Reach



01 Delhi
B-474, Nehru Ground, N.I.T Faridabad, Haryana -121001
Contact Person: **Ashish Rajput - 92156 99673**

02 Rajkot
304 Diwali Chambers, Dhebar Road, Rajkot, Gujarrat-360002
Contact Person: **Arun Kumar - 89500 99611**

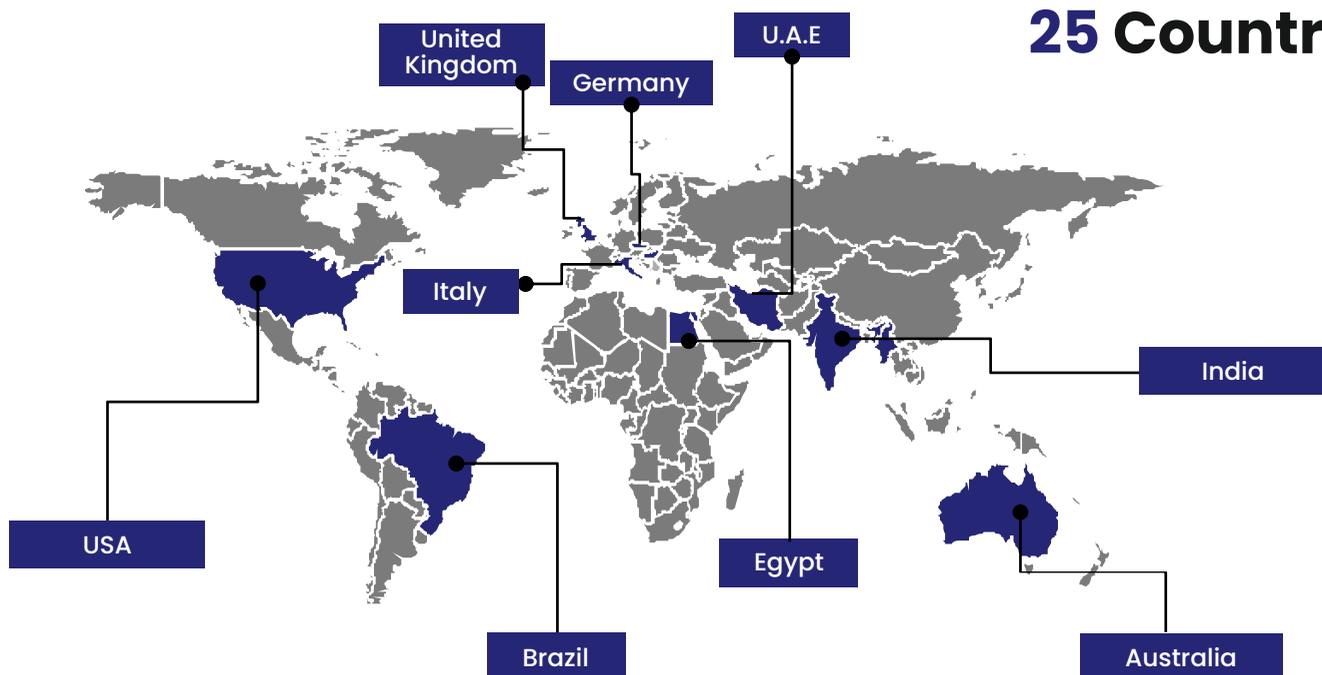
03 Mumbai
Office No.2, M.D. Tones Paradise, Opp. New Pedastrian Bridge, Navagaon, Dahisar (W), Mumbai - 400068
Contact Person: **Nihal- 92156 99676**

04 Indore
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05 Bangalore
#328, Third Main Road Domlur Layout Bangalore
Contact Person: **Vikas Kansal- 70824 20431**

06 Chennai
F.No.110, Mugalivakkam Main Road, Madhanandhapuram, Chennai-600
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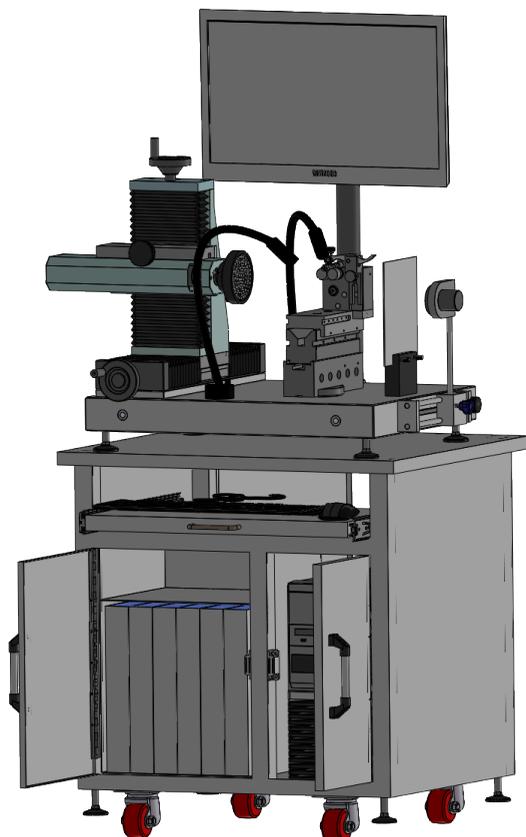
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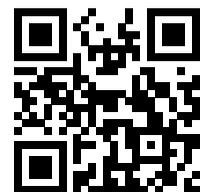
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Book a 30mins online demo



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Technologies Pvt Ltd**

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