

CNC-Plus

Ace Micromatic Group Newsletter

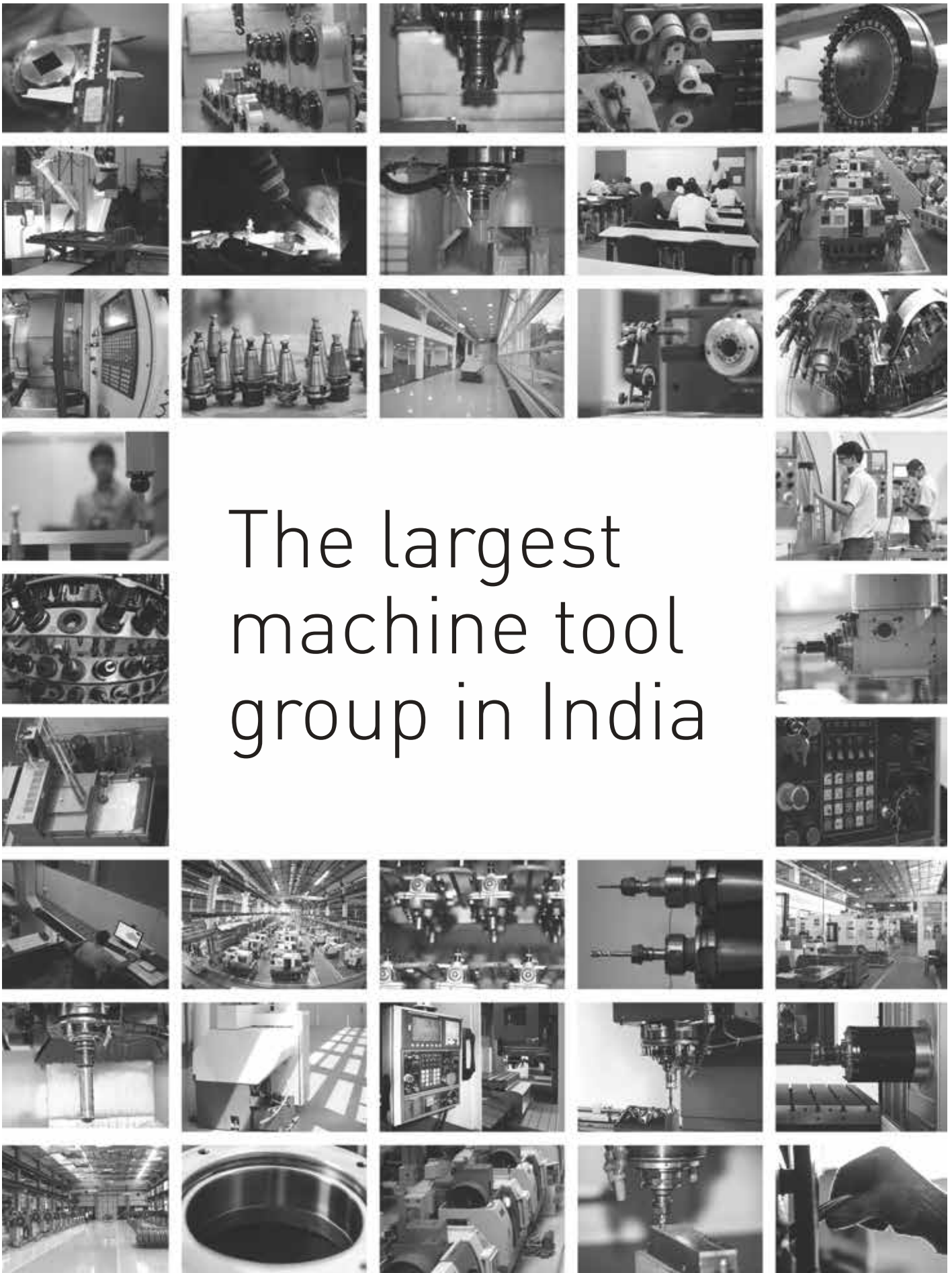
Issue 01

Jan 2017

TRAK-ing

Productivity
for Success





The largest
machine tool
group in India



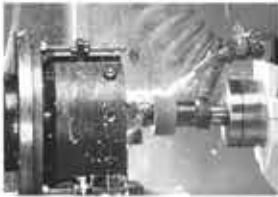
ACE[®]
DESIGNERS

TURNING SOLUTIONS



AMS[®]
In Pursuit of Excellence

MILLING SOLUTIONS



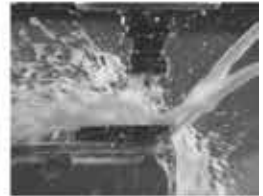
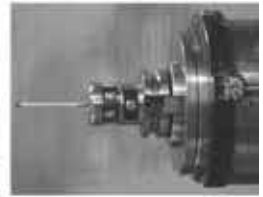
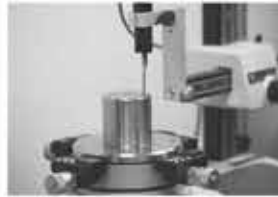
MG Micromatic
Grinding
TECHNOLOGIES LTD.

GRINDING SOLUTIONS



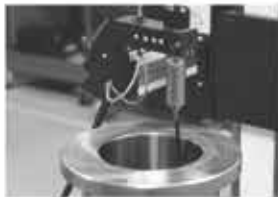
Micromatic

SALES & SERVICE



PRAGATI

AUTOMATION SOLUTIONS



AmiT

PRODUCTIVITY SOLUTIONS



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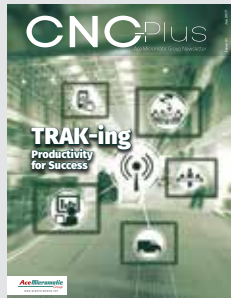
Manasi Devendra Goje

Content & Design:



Printed at:

World Wide Media



Cover Page:

Industrial Internet of Things (IIoT) is all about connecting employee, machine and management into one continuum for improved productivity. The cover image illustrates the multilateral nexus that enables real-time information, prompt support and uninterrupted functionality on the shop floor.



06

**TRAK-ing
Productivity
for Success**

NEWS



12

NEW LAUNCH



13

LAUNCH @ IMTEX



14

INNOVATION

16

**MACHINING
AUDIT**

18



22

**EVENT
2016**

24

Ring in the new...

Welcome back, and wish you all a very happy new year! With your continued support, we will keep working on our group philosophy of creating "Value Through Technology". Our conscious efforts in 2017 will be keeping the ideals of "Make in India" at the forefront.

Our new product, the Next Generation Precision Grinder, an indigenous high precision cylindrical grinder from MGT has been made in collaboration with IIT - Madras and Advanced Machine Tool Testing Facility (AMTTF). The collaboration is in line with our commitment to engage with academia and industry to promote knowledge and develop new technology.

For a closer look at our entire product and service array, do visit us at IMTEX 2017, from January 26 to February 1 at Bangalore International Exhibition Centre, Bengaluru. Our homegrown latest technologies and solutions will be on display at the Ace Micromatic Group Pavilion in Hall 4, Stall B106. Furthering our customer engagement endeavour, on February 14 we officially raise the

curtain on our new Tech Centre in Rajkot - another step bringing us closer to our customers to meet their expectations and join them in their growth story.

One future trend knocking on our doors already is the Industrial Internet of Things (IIoT), aka Smart Manufacturing or Industry 4.0. Our step to embracing it is the Manufacturing Intelligence suite, from AMIT, the cover story on insightful experiences of our customers

of its successful implementation and utility.

We remain committed to bring you through CNC Plus engaging content regularly. To this end, I am happy to announce our new collaboration with Magic Wand Media Inc, a content marketing and branding team with

profound experience and intrinsic knowledge of the Indian manufacturing industry.

We solicit your feedback.

Keep them coming!



T K Ramesh, CEO
Micromatic Machine Tools

Visit us at
IMTEX 2017
Ace Micromatic
Group Pavilion
at Hall 4, Stall B106
Jan 26 to Feb 1
BIEC, Bengaluru



TRAK-ing

Productivity
for Success



While Industrial Internet of Things (IIoT) is all the rage in production these days, actual implementation of IIoT-based technologies comes with its own set of challenges and rewards. We bring you three success stories from our valued customers who implemented the AmiT – TPM-Trak®, a manufacturing intelligence suite from the Ace Micromatic Group and are now reaping the benefits in productivity, employee performance and better understanding of their machines.

The long-anticipated future is here, and IIoT is a reality in the manufacturing sector today. Simply put, IIoT-based technologies help us “see” each unit in a manufacturing setup during production, allowing better control and analysis of the process. It is the first step towards real Smart Manufacturing. “Whether you call it IIoT, Smart Manufacturing or the German term Internet 4.0, it is the buzz word in the manufacturing industry, indicating integration of sensors, communication technology, and software all put together as one solution,” expounds Product Head, Manufacturing Intelligence, Ace Micromatic Manufacturing Intelligence Technologies Pvt Ltd (AmiT), M N Somashekhar, Vice President, Projects, Bharat Forge Ltd, Sagar Inamdar explains the company’s perspective for implementing IIoT: “We wanted to optimize and automate to keep our productivity going up.” Ask Executive Director, Manufacturing RIJ Engineering Pvt Ltd, Kamaal Qasmi who has recently purchased the AmiT TPM-Trak® observed a jump in productivity. “It is not possible for

the supervisor to go and monitor each machine manually,” notes Qasmi, “but with this system we can monitor all the machines at one go on one system. We have seen an increase in productivity by 10 per cent.”

Supplying his own experience at Samarth Engineering Services, Managing Director Prashant Shete shares, “With the help of TPM-Trak® software, we were able to manage production schedules meticulously and save ourselves from buying an extra machine. It helped us to reduce our investment. The working was healthy and very predictable.”

Emphasizing on the relevance of IIoT in the industry today Regional Lead-Western India, AmiT, Rammohan Yadati describes the current scenario, “Indian companies are at an early stage of adoption in the IIoT journey. Readiness largely depends on maturity profile of the individual company in terms of processes, IT infrastructure and alignment and sponsorship from

The Internet of Things (IoT) has the potential to impact everything from new product opportunities, to shop floor optimization, to factory worker efficiency gains that will power top-line and bottom-line gains.

Goldman Sachs, in its report The Internet of Things: The Next Mega-Trend



» We are on a mission to double our revenue by 2020. We will not be increasing our man force but our technology force, integrated with automation."

Vice President, Projects, Bharat Forge Ltd, Sagar Inamdar



TPM-Trak® installed on machines at RIJ Engineering Pvt Ltd



» We can now monitor the production on hourly basis. After installing the TPM-Trak® we have seen an increase of 10 percent productivity."

**Executive Director,
Manufacturing,
RIJ Engineering
Pvt Ltd,
Kamaal Qasmi**

senior leadership. Many companies are taking up IIoT programs by involving domain experts, system integrators and technology OEMs to understand and benchmark several aspects of manufacturing productivity."

The Product

Yadati further adds, "We have been the first mover in providing Industry 4.0 and Industrial IoT solutions in manufacturing space in India, and continue to create robust innovation which can deliver quick, tangible benefits to customers. Our solutions span different areas of Industry 4.0 such as Real-time OEE & Production Analytics; Process Energy Monitoring; Online Inspection & Poka Yoke; Visual Factory & ANDON; Workflow Apps; Machine Diagnostics; and Assembly & Conveyor Monitoring." Being a part of the machine building Group, AceMicromatic, AmiT is fully prepared to serve the manufacturing industry in IoT space, developing smart machine technology for CNC turning, machining and grinding machines.

The Customers

Bharat Forge Ltd is world's largest crankshaft manufacturing company. While

the company deals in a variety of products, the backbone is automotive – crankshaft, steering knuckle, drive and transmission channels. The company has also diversified into gear shaft and turbocharger business; besides interests in aluminium and most recently, defence and locomotive.

Samarth Engineering Services are manufacturers of small precision components, with a product basket including poly groves pulley, valve cap components etc. and belting out around four lakh components per month. RIJ Engineering Pvt Ltd is an integrated OE Gear manufacturer, providing high quality machining support to the automotive sector in India. Its clientele includes Tata Motors, Mahindra & Mahindra, Fiat India Automobiles Ltd, Dana Spicer, VE Commercial Vehicle Ltd, Eaton, etc. All manufacturing processes are performed in-house, with a production capacity of two lakh components per month.

Foray into TPM

For Samarth Engineering, the 2008 recession was a wake-up call to take a hard look at the way they were producing. "At the suggestion of Managing Director, AmiT, Chandrashekhhar Bharti we implemented TPM-Trak® on four machines, and the



results were very effective,” shares Shete. At present, the company is making components for Indo Schöttle Auto Parts Pvt Ltd, Turbo charger for Tata and components for Borg Warner. Sensing a need to expand, the company is moving from its current 2500 sq ft facility to a 10,000 sq ft industrial space next year. AMG will accompany them to the new setup, Shete confirms. Detailing the objective of buying TPM-Trak® for RIJ Engineering, Qasmi puts, “We have hundreds of machines and it is difficult to monitor productivity of each machine manually. We were looking for an automated product which could give all information on machine productivity and provide unfiltered information without any intervention or manipulation so that we could monitor the machine productivity transparently.” Having found encouraging results after the first TPM-Trak® installation around 10 months ago the company got it installed on 32 machines in two plants at different locations.

The challenge

Shedding light on the project at RIJ Engineering, Yadati shares, “We came across the challenge to harmonize the best practices and requirements across plants

which have different processes and skill levels for technology adoption.”

He moves on to the Bharat Forge story, a company that in Yadati’s words, “is passionate about IIoT, and the projects at BFL are technically challenging. Working with corporate sector such as BFL involves discussions and co-ordination with several stakeholders to finalize requirements of the solution and methods of execution. Providing training to different levels of the work-force in different departments/ teams to suit the usage and skill sets was another challenge.”

Every project brings its unique set of challenges, and the same was true for Samarth as well where the first task was to overcome the hesitation or prejudice in the minds of the work-force. “A monitoring solution was being perceived as a ‘policing tool’,” recalls Yadati, “At Samarth Engineering, team members had to be educated about the importance of fact-based working and adoption of IT-based solutions in manufacturing shops. It was explained to them that the objective is on addressing process related issues that would subsequently help increase their own productivity. Today, at Samarth



» With the help of TPM-Trak® software, we were able to manage production schedules meticulously and save ourselves from buying an extra machine. It helped us to reduce our investment.”

**Managing Director,
Samarth
Engineering
Services,
Prashant Shete**



Manager Productions, Samarth Engineering Services, Manu Panicker elaborating on the advantages of installing TPM-Trak in their plant



» We are in this industry since more than 10 years. We have eight products with integrated productivity, monitoring solution, TPM-Trak®. All our products are integrated in such a manner so as to benefit from the latest Smart Manufacturing technology."

**Product Head,
Manufacturing
Intelligence,
AmiT,
M N Somashekhar**

Engineering, all 14 CNC machines are enabled with TPM-Trak®. Workers review their performance themselves using TPM-Trak® dashboards."

The Transformation

The leap of faith in purchasing TPM-Trak® was duly rewarded in each case. For Qasmi, the first benefit was that automation meant no manipulation of data. "The best part is the report gets generated timely and reaches us on the set schedule," he affirms, "We have 400 people and our first shift starts at 6 a.m. With the Implementation of this system the tracking is easy. "RIJ engineering is using TPM-Trak® OEE monitoring and add-on IoT alerting modules," Yadati adjoins, "At RIJ Engineering, technical pre-requisites such as getting the required signals from machines for TCS_PLC variant involved the coordination between their electrical maintenance team, AmiIT team and MMT team. AmiIT also helps the customer to identify right choice of IT infrastructure. Today, RIJ TPM-Trak servers are available remotely to AmiIT technical team in Bangalore which allows RIJ users to interact with AmiIT team at any time to clarify the doubts or

get required technical help."

Production reports for RIJ have become timely and more constructive too. "TPM-Trak® gives an insight timely on each machine's production capacity, idle time, set-up time, all correlated with the operator. Hence, we now understand every operator's strengths and weaknesses, as well as the kind of training they require. We develop a matrix based on the report in terms of every operator's output," says Qasmi.

Leveraging the most

Samarth Engineering is using TPM-Trak® OEE monitoring solution. Noting his satisfaction, Shete says, "We have developed capacity calculation software, where we enter the part names, cycle time and man hours. It instantly generates data on capacity, based on which we can decide if we are falling short and need to outsource some of the components. We are working with 90 per cent productivity. We have confidence and back up, and software never betrayed us. Productivity of TPM-Trak® is 85-90 per cent."

"The TPM-Trak® is an innovative product in our sort of manufacturing set up," Qasmi declares, "The idle time and wastage of components have reduced drastically. We can now monitor the production



Operators at Samarth Engineering align with the company's philosophy of growth and understand the value of being monitored



Challenges can be either technical or personnel related. Both can be overcome by working closely with the customers, and generous interaction to educate and address all concerns of the employees before installation."

Regional Lead-Western India, AmiT, Rammohan Yadati

on hourly basis. After installing the TPM-Trak® we have seen an increase of 10 percent productivity." RIJ Engineering is affirmatively on board for more connectivity, confirms Qasmi, "Ultimately we want to connect all the machines – the entire plant. The software provides us the productivity we are looking for."

CNC^{Plus}

We are grateful to our customers for their support and contribution to the cover story.

**Bharat Forge Ltd
RIJ Engineering Pvt Ltd
Samarth Engineering Services**



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Ace Micromatic Group Newsletter

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Rajkot to get a TECH CENTRE



To serve its customers better, Micromatic Machine Tools Pvt Ltd (MMT) has announced the opening of its Tech Centre at Rajkot on Feb 14, 2017.

Spread across a sprawling area of 9,400 sq ft, the state-of-the-art Tech Centre is slated to provide myriad training programs from basic CNC machine operating, advance training, machine maintenance training, component cycle time study, fixtures solution, to production improvement and so on to its customers. With an objective to increase awareness and knowledge on CNC machines amongst its clientele, MMT intends to work closely with its customers and provide them with application support.

During the opening of the Tech Centre next month, there will be an array of wide range of machines from the Group such as: Ace: SJ400-LM, SLC-16-LM. AMS: VMC 850V and MGT: SGA-40.

The Rajkot Tech Centre will be inaugurated at the hands of Managing Director, Echjay Industries, Parasbhai Doshi; Chairman, Amul Group, Sureshbhai Patel; Managing Director, Rolex Rings, Manishbhai Madeka and Managing Director, Fm-PBW, Maheshbhai Patel.

MMT started its Gujarat branch in 2004. Since then, the company's customer base has expanded to an impressive number of 1,435 using 2,840 machines. Catering to the requirements of diverse industry sectors from automobile, die-mould, agriculture submersible pumps, hydraulic and surgical implants, these customers have always found machines from the Ace group very reliable.

CNC^{plus}

MMT started its Gujarat branch in 2004. Since then, the company's customer base has expanded to an impressive number of 1,435 using 2,840 machines.

To know more contact us: E:connect@acemicromatic.com

CMV-350 TS

Twin Spindle Column Moving Machining Center
 CMV-350 TS, a compact machining center is designed for outstanding dynamic rigidity while its isolated working zone enables better chip and coolant management system.



Benefits of CMV-350 TS

- Two parallel spindles machining two identical work pieces at once
- Large reduction in the cost per component due to reduction in Cycle time per component
- Optimal reduction when multiple components are machined each cycle
- Two times the productivity within a footprint only slightly larger than that of a single spindle machine
- Reduction in the manpower requirement, resources maintenance cost
- Reduced Power consumption
- Perfect balance of Productivity & Economy
- Ideal for high volume production of identical components

Cutting edge features

- Twin spindle column moving type VMC
- Center distance between two spindles: 350 mm
- Faster Pallet changer (Turn table) – Pallet changing time of 8 sec with 600 kg load per side
- Large table size of 1100 x 500 mm (2) – Can accommodate Rotary table on both sides
- Chip to chip time of 4 secs- ATCs attached to column

Showcasing THE BEST!

As a leading brand in the Indian machine tools space, Ace Micromatic Group will once again occupy a prime position in IMTEX 2017 in Bengaluru. Our booth at the exhibition will feature some of our latest and most popular solutions in Turning, Milling, Grinding, Machine Building, as well as IoT and Smart Manufacturing.

Array of Solutions & Products on display

Turning

- Compact - High Performance Turning Centre
- Precision-CNC Sliding Head Automat
- IoT Enabled Machines
- Productivity Enhanced by Automation Solutions
- Shaft Turning Solutions

Milling

- End to End Automation Solutions
- High Dynamics 5 Axis Machining Center
- High Productive Twin Spindle Machining Centers
- High Speed Drill Tap Machining Centers
- High Speed Compact VMCs

Grinding

- CNC Internal Grinder
- CNC Centerless Grinder
- Technology Corner
- Value Added Services Corner

Machine Building

- Servo Turrets
- ATC for Universal Machining Centre
- ATC for HMC and VMC & ATC for Drill Tap Centre
- CNC system for Turning & Milling Machines
- Servo Motors and Drives

IoT & Smart Manufacturing

- MachineConnect
- eSHOPx Digital Factory
- TPM-Trak OEE & Visual ANDONs
- Process Energy Monitoring
- Assembly Conveyor Monitoring
- Customer Support
- Value Added Services
- Application Support & Training
- Channel Partners & Financial Solutions

iG-150U

High precision 2/3 Axes CNC Cylindrical Internal Grinding Machines are ideal for variety of internal, external and face grinding applications

Features

- Twin spindle application for grinding stepped bore of different ranges in single setup
- Compact foot print for machine mounted accessories for plug and start
- Automation with Robot and Gantry
- Wheel Spindle RPM ranges 7500 to 105000 for higher material removal ensuring consistent, enhanced quality



Trailblazer PRECISION IN GRINDING

Objective

Development of an indigenous cylindrical grinding machine equivalent to the best in class grinding machine in the World.

Frame-work for the design, building & testing of a similar Next Generation high Precision Grinding Machine (NGPG).

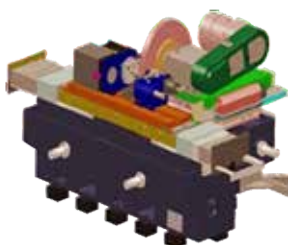
The team

NGPG was developed with the collaborative efforts of IIT-Madras, MGT, PSA office-Govt. of India, IMTMA and AMTTF. Progress was reviewed quarterly & monitored by the PRMC (Project Review Monitoring Committee)

Performance targeted for the Next Generation Precision Grinder (NGPG)

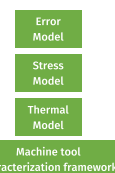
Specification as per ISO 2433:1999 (E)	Reference machine	SH-63 machine	Project target
Circularity (μm)	0.7	1	0.5
Consistency of diameter ($\mu\text{m}/\text{mm}$)	1/300	4/300	1/300
Process scatter after (30 minutes warm-up (dimensional stability without guage) μm (dimensional stability without guage) μm)	5	10	<5
Process scatter for 8 hour duration (1 typical production shift)	25	35	<25

Grinding wheel Surface Speed (Maximum Speed for characterizing the performance of grinding machine)			
Conventional wheel (660mm x 60mm)	60	60	60

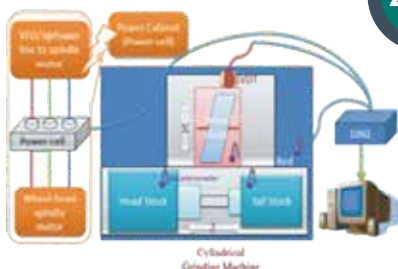
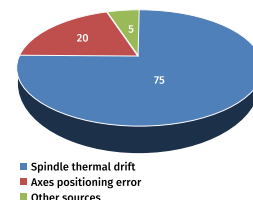


- Project sanction by OPSA
- IITM and MGTL partnering together
- Identification of indigenously developed machine
- Setting of target for NGPG

- Development of machine characterization framework
- Identification of precision influencing elements of machine



Percentage contribution of error sources



- Development of Diagnostic tool for process characterization
- Development of Machine tool testing protocol with AMTTF
- Benchmarking with world class machine



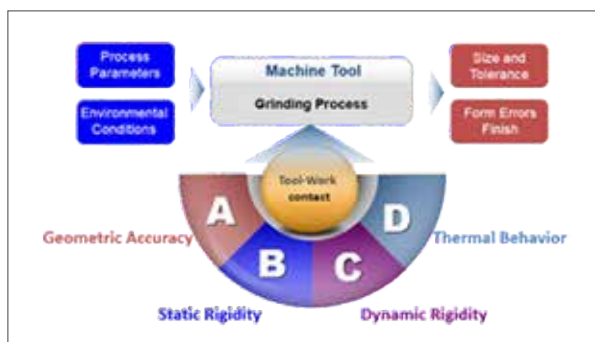
The Approach

To make a characterization framework for evaluating the performance of a High Precision Grinding Machine.

To conduct the testing and compare both the MGTL machine and the World class cylindrical grinding machine for the Geometrical, Static, Dynamic & the Thermal characteristics

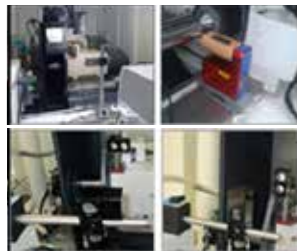
- To set goals for the NGPG machine
- To develop design, manufacturing & testing Guidelines for the NGPG
- To build the NGPG, verify the set targets & deliver it to IIT-M (for further research work)

Performance Evaluation of Machine Tool



NGPG - PRMC committee members
 Prof N K Mehta (IIT - Rorkee Chairman),
 Mr Neeraj Sinha (Member Secretary -
 PSA office GOI), Prof P V M Rao (IIT - Delhi),
 Dr R Balasubramaniam (BARC - Mumbai),
 Mr P J Mohanram (IMTMA - Bangalore),
 Mr B R Mohanraj CMTI - Bangalore,
 Mr T Parabrahman (ex MD, KTTM-not present),
 reviewing the progress of NGPG machine
 building at MGT Bangalore plant.

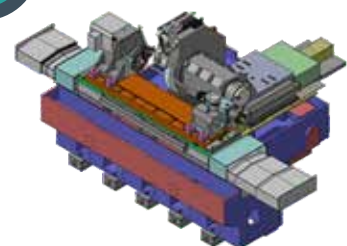
- Suggestions to upgrade the machine to NGPG
- Enhancement of Design, Manufacturing and Assembly process at MGTL



2015

2016

- Design validation with exp. Results
- Building of NGPG machine.
- Testing & Realization of NGPG Machine.



To know more contact us: E:connect@acemicromatic.com

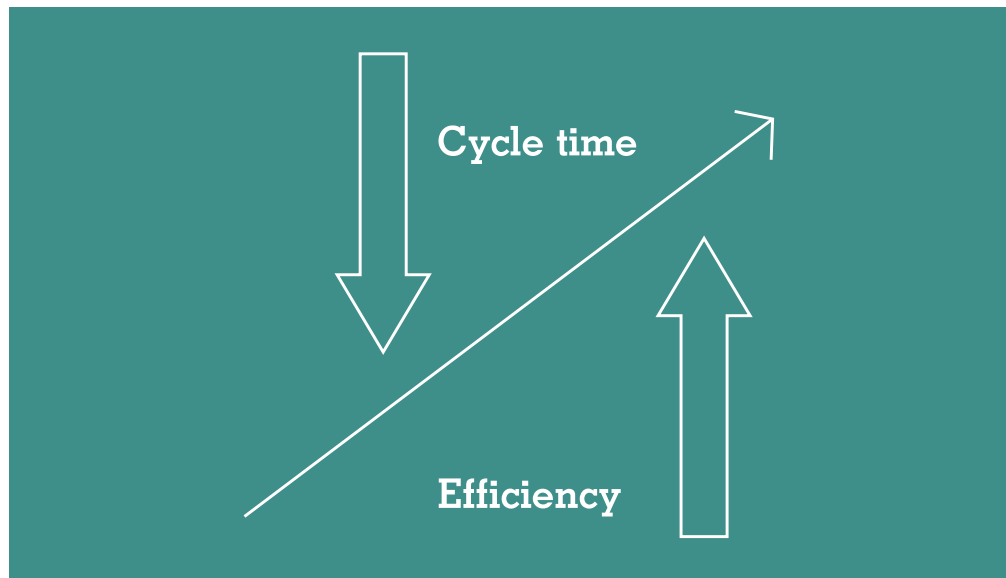
Getting Maximum **OUT OF RESOURCES**

Timely and regular audit of the machine tool setup can be of immense value in extracting the most output from existing resource without additional investments. We began an educational series on the subject in the last edition with a brief overview of general turning. We continue the journey here with aspects of grooving on turning centres. An insightful read...

Productivity is one of the utmost important aspects of any manufacturing unit, may it be big or small. Paying attention towards small but important things can help the unit save time & cost and enable better efficiency. As it is said, 'size does matter', is true in the case of manufacturing. Not only the type of tool but also size of the tool matters. In this

regard, a regular audit of the job conducted can give you an insight about how the tool is used. It will further help you in selecting a tool that is ideal for the job. While grooving, keeping an eye on small details such as tool's width will result in better tool life thus, cost saving.

Here is how you can achieve more through right tool width selection.



CASE 1: TOOL WIDTH SELECTION

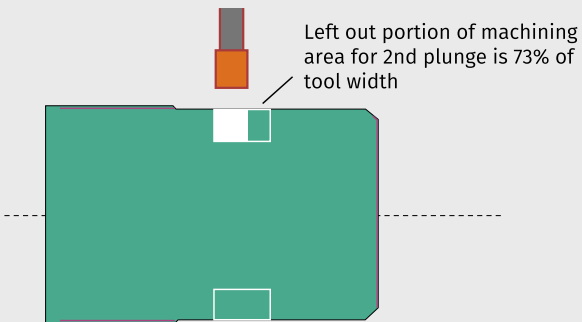
If groove width is bigger than tool width: **we have to decide as to how many plunges we would require to finish the operation.**

Multiple plunges:

- 1st plunge covers 100% of tool width
- 2nd and subsequent plunges will cover the cutting width upto 60-75% of the tool width

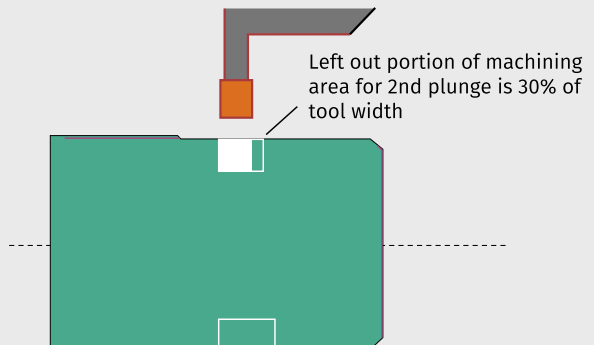
Case OK

	mm	
Groove width	5.2	
Suitable tool width	3	
1st Plunge	3	100%
2nd plunge	2.2	73%



Case not OK

	mm	
Groove width	5.2	
Suitable tool width	4	
1st Plunge	4	100%
2nd plunge	1.2	30%





TWO PLUNGE CUT:

No. of edges engage during the plunge cuts:

- During 1st plunge both edges of insert are engaged
- During 2nd plunge only 1 edge is engaged, this creates imbalance in tool life.

Example:

If we produce 100 parts with 2 plunge cuts:
As per the below picture:

Left edge	Right edge
	
<ul style="list-style-type: none"> • Engages once per component. • For 100 parts engages 100 times 	<ul style="list-style-type: none"> • Engages twice per component • For 100 parts engages 200 times

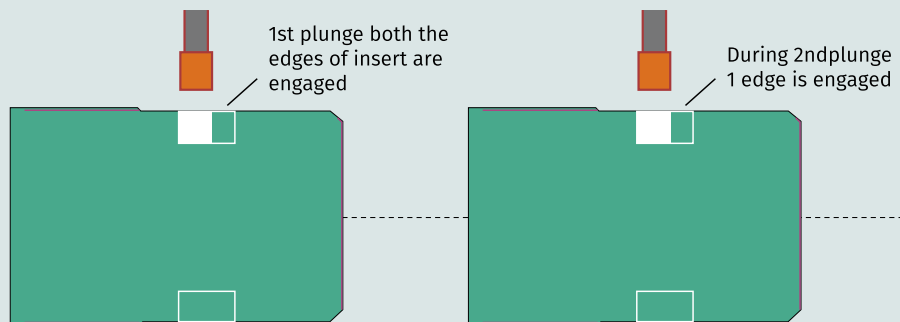
Result:

Imbalanced tool life

- Left edge is used 50%
- Right edge is used 100%

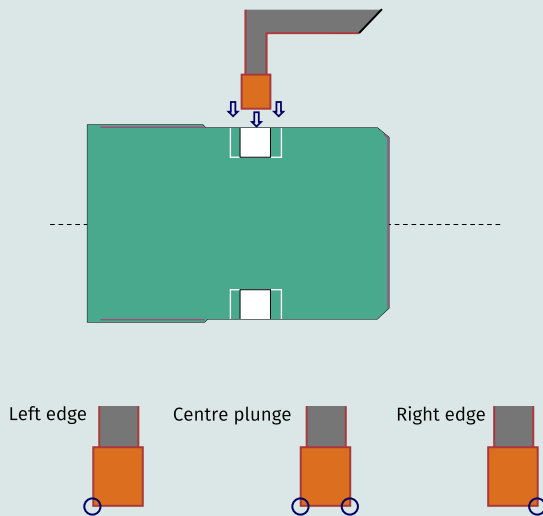
Solution:

Use subprogram and macro for machining alternate parts from left to right & from right to left



THREE PLUNGE CUTS:

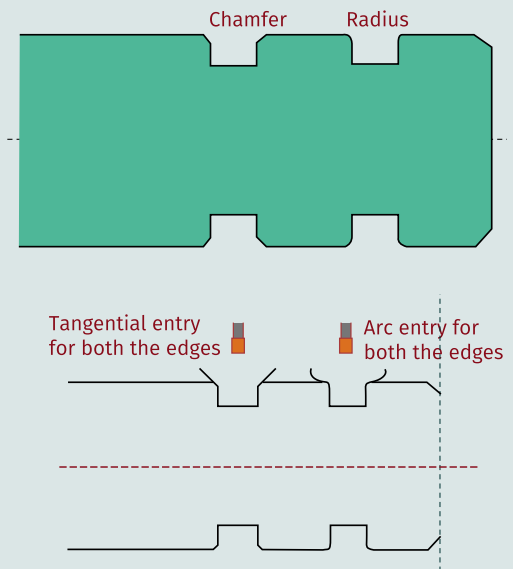
During center plunge both the edges of grooving insert are engaged and during left and right plunge respective edge will engage once.



- | | | |
|--|--|---|
| <ul style="list-style-type: none"> Engages 1 time per component. For 100 parts engages 100 times | <ul style="list-style-type: none"> Engages both the edges | <ul style="list-style-type: none"> Engages 1 times per component. For 100 parts engages 100 times |
|--|--|---|

Result: Balanced tool life

CASE 2: GROOVE TOP EDGE MANAGEMENT:



- Ensure X offset of grooving tool
- Use Tool Nose Radius Compensation (TNRC) for groove finish operation
- Maintain similar OD tolerance and groove bottom diameter tolerance to ensure smooth tangential contact of grooving tool with pre-turned OD

Contributed by our Technical Expert Kashinath M Patnasetty
To know more contact us: E:connect@acemicromatic.com

Safeguard YOUR TURNING CENTRE



Always use, confirm, monitor and maintain



LIST OF GUIDELINES	DISADVANTAGES OF NON-COMPLIANCE	REPERCUSSIONS ON THE MACHINE
Safety & electrical supply		
Four pole ELCB of rating 30mA tripping current	No leakage current control	Electrical shock and CNC Control failure
415V Phase to Phase voltage	Electrical and electronic parts failure	No control on machine reliability
Dedicated earthing with Neutral to earth leakage < 3V and Resistance of <100 Ohms	Transfers leakage	Leakage currents may cause electrical shocks to human, machine & CNC controls
Make sure the AC temperature is maintained as per the requirements	Failure of electrical and electronics component	Effect on machine reliability
Machine environment		
Dust, moisture, standing water, liquid and rain free environment	May effect the machine and machine elements	Reduction in reliability of machine and machine elements
Non exposure of machine and CNC to direct sunlight or other heat sources	Overheating of machine and machine elements	Overheating of machine and machine elements

Machine Foundation as per recommendation	Vibrations and dampening of machine	Accuracies Machined parts, Tool Life and reliability of machine
Pneumatic supply to machine		
Dry air and required air pressure as per recommendation	Moisture entry to Pneumatic elements and other machine elements	Interruption in machine operations, failure of elements and reduction in machine reliability
Compressor with recommended capacity of volume and pressure	Performance of the machine elements	Interruption in machine operations, failure of elements and reduction in machine reliability
Maintain the air pressure on different areas of machine	Required air pressures are not met	Interruption in machine operations, failure of elements and reduction in machine reliability
Spindle and axes lubrication		
Recommended gear box lubrication - Enco 32	Lack of lubrication to key elements of machine	Premature failures of elements, Accuracies of machine, Reliability of parts and machine
Recommended axes lubrication oil/grease (Oil-Servo way 68, Grease - LHL X100)	Lack of lubrication to key elements of machine	Premature failure of elements, Accuracies of machine, Reliability of parts and machine
Coolant properties		
Non Synthetic coolant oil	Synthetic coolant takes away lubrication oil	Premature failures of elements, Accuracies of machine, Reliability of parts and machine
Concentration of coolant >5%	Cooling to the machining part, cutting tool and lubricity	Tool life and surface finish
Use DM water for mixing the coolant oil	Rusting of machine element, paint peel off, skin allergies	Sump life, Human, raw material, seal, paint and corrosion
Properties	DM Water	Coolant
Hardness	<200ppm	550 to 600ppm
Chloride	25ppm	50ppm
PH	6.7 to 7 Ph	8.5 to 9 Ph
Hydraulics		
68 Grade oil	Hydraulic power pack pressure drop Oil heating	Interruption in machine operations failure of elements and reduction in machine reliability
Cleaning and replace as per recommendation		
Machine external and internal	Entry and collection of swarf and sludge	Interruption in machine operations, failure of elements and reduction in machine reliability
Filter - Hydraulic, Pneumatic, Cabinet, AC, coolant	Clogging of filters	Interruption in machine operations, failure of elements and reduction in machine reliability

We trust that you have found the above details useful and wish to assure you that compliance will help your team to ensure better reliability and machine of time.

If you need any further assistance, please do not hesitate to contact our local service support.

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Snapshot Of EVENTS @ 2016



Display of new J 400 XL/LM machine



Inauguration being done by chief guest



MMT team present at Expo



Die & Mould components being appreciated

Pune Machine Tool Expo

Organisers: IMTMA

Venue: Pune

Dates: Sept 29 – Oct 2, 2016

The IMTMA organised expo saw participation from over 100 exhibitors, attracting over 7400 visitors and 62 trade delegations from various industries, including auto components, automobiles, capital goods, defence, aerospace and railways. Micromatic solutions for CNC Turning, Milling, Grinding and Productivity Monitoring Solutions received positive response from visitors.



Discussion with customer



Machining being explained to customers

Gurgaon House Show

Organisers: Micromatic Machine Tools Pvt Ltd

Venue: Gurgaon

Dates: Nov 14 – Nov 17, 2016

Chief Guest, Executive Director-Sona BLW Precision Forging, Vikram Verma graced the occasion. Stalwarts from the large automotive companies of the region were introduced to our new grinding machines - IG 150U and CLG 5020. Additionally, we also demonstrated the new CNC turning machine J 300 LM & solution for machining of Die & Mould. Customers also benefited from the rich experience of our experts who conducted seminars on latest developments in Precision Grinding, Die and Mould machining and IoT.

Ahmedabad House Show

Organisers: Micromatic Machine Tools Pvt Ltd

Venue: Ahmedabad

Dates: Nov 17 – Nov 19, 2016

Chief Guest, Bharat Patel graced the show with his presence. Special display of the Simple Turn Flat Bed CNC Lathe at the premises of our dealer Macht Exim LLP, Ahmedabad. The Simple Turn 50125 and 50125 6T machines garnered a resounding positive response from many customers. The visitors appreciated the ease of use and enhanced productivity of the machines.



Machine being explained to customers



Discussion with customers



Live cutting demo



Machine being explained to Customers

Delhi House Show

Organisers: Micromatic Machine Tools

Venue: New Delhi

Dates: Nov 23 – Nov 26, 2016

Unveiling of the Die & Mould machining centre and the new J Series turning centre. Customers witnessed a live cutting demo and interacted with experts from our application team. IOT was one of the major attractions.

Metalex 2016

Organisers: Reed Tradex Co Ltd

Venue: Bangkok

Dates: Nov 23 – Nov 26, 2016

Our presence at this biennial expo provided an opportunity to get closer to Southeast Asian customers. A large number of prospective customers from across Agriculture, Automotive, Aerospace and Education sectors visited the stall. Our popular products like J 300 LM turning centre with Robo, Super Jobber Elite, Vertical machining center 1060V & Spark & Tutor garnered a lot of attention.



Ace Micromatic stall at Expo

Rajkot Machine Tool Expo

Organisers: KMG Business Technology & Machine Tools
MFRS Association

Venue: Rajkot

Dates: Nov 23 – 26, 2016

Prominent regional exhibition for machine tools, cutting tools and allied sectors, where Micromatic held one of the major exhibits. We received a great response from visitors. In particular the newly launched J 400 LM and SG 40 machines attracted a lot of interest. Micromatic was the proud recipient of the Platinum Award for the Best Innovative Product & Display.



850V being explained to the customer

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