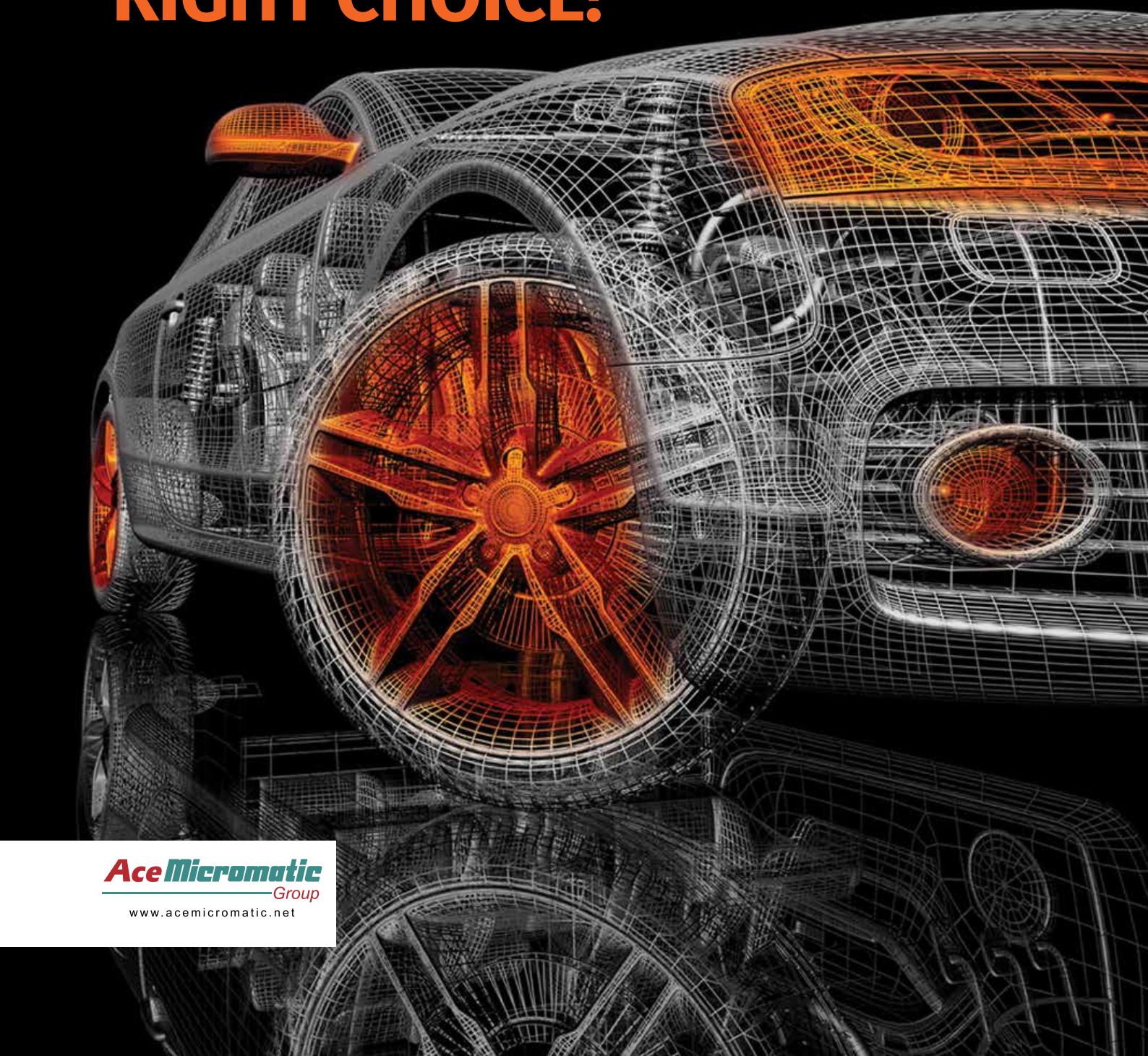
CNC Plus

Ace Micromatic Group Newsletter

May 2017
Issue 02

Making the RIGHT CHOICE!



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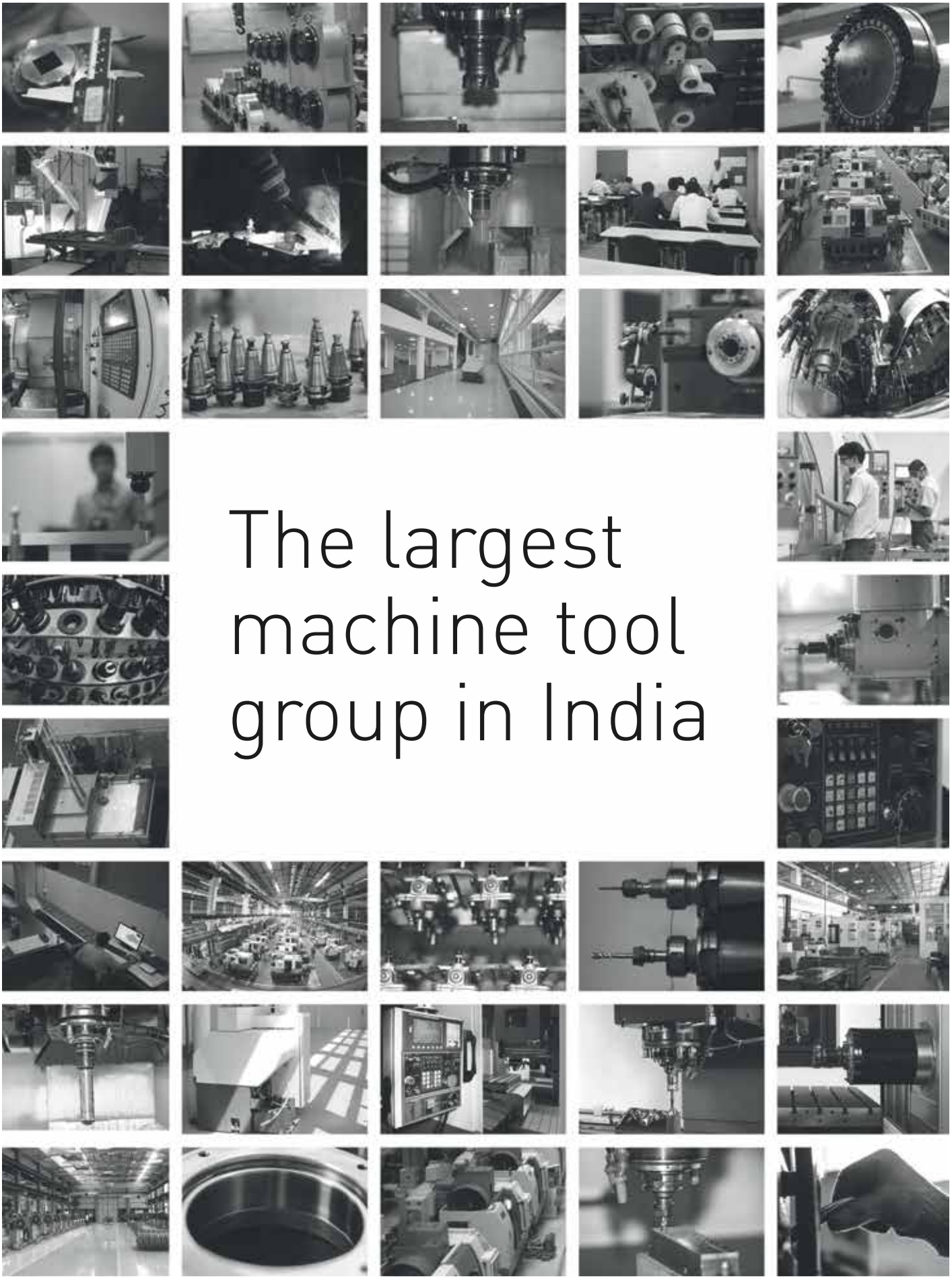

The largest machine tool group in India





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TURNING SOLUTIONS

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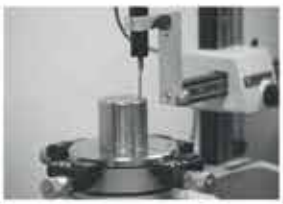
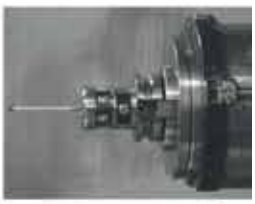
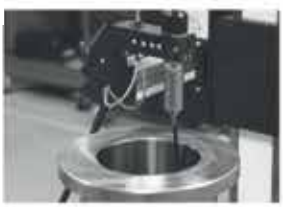







PRAGATI

AUTOMATION SOLUTIONS



AmiT

PRODUCTIVITY SOLUTIONS





IMPRINT

If you have any interesting story/ event/contribution to be shared or any questions,
please get in touch with the editor at sreekanteswar@acemicromatic.com

Editor:
Sreekanteswar Shankarnarayan

Sub-Editor:
Manasi Devendra Goje

Content & Design:
Magic Wand
Excellence is a habit!

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Cover Page:
Owing to its technological, cost and manpower advantage, the Indian automotive industry today enjoys its stature of being among the largest in the world. The state of Gujarat provides all the above perks along with a proximity to auto component manufacturers, and hence is an attraction for global automobile companies. The cover illustrates futuristic automobile that will demand higher precision, resulting in a swanky vehicle one covets.

CONTENTS

Committed to **Quality.** Committed to **You!**

Welcome back to another edition of CNC Plus. As always, we aim to keep you abreast on all aspects of what we have been up to since our previous issue. Our participation at IMTEX 2017 was a success; it showed us the need to continue to bring out products that create 'Value through Technology'. The range of new machines and solutions, including the IoT solutions, of Ace Micromatic Group are cost-effective and help save on the initial investment. They also aid in continued savings through innovative design, and offer efficient operation and machining capabilities for long-term benefits.

The quest for improved productivity has always been accorded a high priority in the industry. We aim to help our customers achieve the same, especially in the current scenario of the 'Make in India' initiative. With an increased number of foreign investors looking at India as a manufacturing destination, Indian component manufacturers need to step up their game and consistently produce high-quality components that match global standards. There is a plethora of opportunities that are opening up for Indian manufacturers, especially the MSMEs, to grow exponentially in the current scenario. However, they need to leverage technology and automation to be able to match global industry requirements. Our cover story focuses on one such example—the new major automotive hub—Gujarat.

> If everyone is moving forward, then success takes care of itself.
>
> *~ Henry Ford*

We share with you several other examples of our consistent effort and commitment in bringing our customers state-of-the-art solutions to fit their changing requirements.

We take the opportunity to wish all our readers an achievement-oriented New Year, for which we extend our full support.

And as always, we solicit your feedback.

T K Ramesh
Whole time Director & CEO
Micromatic Machine Tools

The women work force in Satani Forge and Turn at the shop floor contribute to the making of the products.

An ariel view of the shop floor assembly at Rolex Rings

Making the **RIGHT CHOICE!**

Gujarat is all set to become a major global automotive hub. With global automobile companies making it their base for manufacturing their vehicles, the state is becoming an attractive destination to procure and source world-class quality auto components. Here's an overview of what established organizations have to say with regard to the same.

Rajkot, Ahmedabad, Baroda and other towns of Gujarat have proven to be good destinations for investment. These cities have attracted global automotive companies to invest in the state making it a major automotive hub. Cost effective & competitive manpower, raw materials, auto component manufacturers that produce high-quality products are the main reason for the shift of the automotive sector to the western region of India. Recently even Suzuki has announced that they would be investing about ₹6000 crore in its Gujarat Plant to double its production capacity and setup facility for engines.

New avenues

Paresh Satani, Director, Satani Forge & Turn, whose company was established in 1983 as job work unit in Rajkot, emphasises the advantages MSMEs have at present owing to this shift: "The benefits of Rajkot being a hub include it becoming synonymous with creating a global quality products. It will enhance job opportunities as well as the socio-economic growth of the state.

The auto components at Fm-PBW is machined at AMG machines

Every 10 years we upgrade to new technology, and look to AMG for new solutions."

Mahesh Patel
Vice Chairman
Fm-PBW Bearings Pvt Ltd (Patel Brass)

Additionally, it will encourage innovation and create startups that cater to mechanical based fields."

Agreeing with Satani, Manish Mehta, GM Machine Division & PPC, Echjay Industries Pvt Ltd, added, "Rajkot is witnessing several new trends especially in the MSME industry. We can see many MSMEs growing in Gujarat as automobile companies are shifting their base here. And most MSMEs that are producing high-quality auto components have the benefit of getting new orders owing to this phenomenon."

Market studies have reported that Gujarat is now developing at a faster pace as increased competition is making older companies compete for business. This is perhaps the best aspect of Rajkot becoming an automobile hub. It is allowing MSMEs to grow consistently and increasing the quality of products produced.

Reliability: a norm

However, to give consistent results, the machines used to manufacture components also contribute largely to a company's success on parameters such as finish, tolerance, productivity, and more.

Mahesh Patel, Vice Chairman, Fm-PBW Bearings Pvt Ltd (Patel Brass) wholeheartedly agrees with this sentiment. Established in 1948, his company, a family-run business, initially manufactured brass buttons. It has since grown by leaps and bounds to being the

Using AMG's machines have increased our production capacity from 10,000–20,000 rings per month to 5–10 lakh rings per month."

Paresh Satani
Director
Satani Forge & Turn

Senior Members from Automotive Valves pose for the shutter bag at the facility

We are so impressed with AMG's machines and service that we even persuaded our suppliers to use the company's machines."

Manesh D Madeka Managing Director Rolex Rings Pvt Ltd

only company in Asia to manufacture bimetal bearings, which are supplied to the marine, rail road, earth moving equipment and oil sectors. Patel voiced, "We have been working with Ace Micromatic Group (AMG) for the last 20–22 years. Its machines are very rigid and of good quality. By using AMG machines, our cycle times have reduced by 20–22 percent. We have observed consistent increase in productivity with the machines -- 30–35 percent with the grinding machines, 10–12 percent with turning machines, and 20–25 percent with the machining centers."

Machine tools play an important role in allowing companies to expand their capabilities. Manesh D Madeka, Managing Director, Rolex Rings Pvt Ltd, whose company has been using AMG machines since 1998, to manufacture a wide range of bearings averred, "Using AMG machines have made our current capacity 10 million components per month of which 70 percent are exported to OEMs in the US and in Europe. Thanks to AMG, we have achieved 85–90 percent efficiency in our processes."

More than just machines

Speaking on the same lines, Chetan Patel, Director, Automotive Valves Pvt Ltd added that not only are good quality machines important, but also the relationship between the machine tool provider and the company. Giving an example of the guidance received to further its business, Chetan Patel advised,

Machines from Ace Designers are outstanding owing to its part inter-changeability, i.e., old parts can be used in new machines."

Chetan Patel Director Automotive Valves Pvt Ltd

Echjay Industries team takes pride in working with AMG

AMG is more like our family, and we know that we will meet all our delivery schedules with it. Our productivity has improved with AMG machines."

Manish Mehta
GM Machine Division & PPC
Echjay Industries Pvt Ltd

"Ace Designers has played a pioneer role in developing the valve industry in India. When nobody was aware of valve manufacturing, they developed machines for valves, created awareness on the same and trained their customers. We were one among those who trained under Ace Designers, and hence are very grateful for our success. Owing to the high-quality products we produce, we are able to export 54 percent of our products to Germany, Europe, France, Italy, the USA, the Middle East and Bangladesh."

Adding to this, Deepak Dixit, Manager (Machine Shop), ASK Automotive Pvt Ltd, declared that AMG's success can be linked to its ability to put the customers' needs before anything else. "I believe the reason why its machines are so reliable is because AMG focuses on customer satisfaction. Its machines allow fast production, which helps in on-time delivery — an aspect that is important for success in the automobile sector. I feel that as AMG machines are maintenance-free, and have almost zero downtime, these machines are best suited for the automobile sector."

All-in-all

With the current atmosphere, Gujarat offers big players the opportunity to manufacture at cost-competitive rates and offers MSMEs a chance to grow substantially. The only choice that clearly needs to be made is in choosing the right partner for the journey to success! CNC Plus

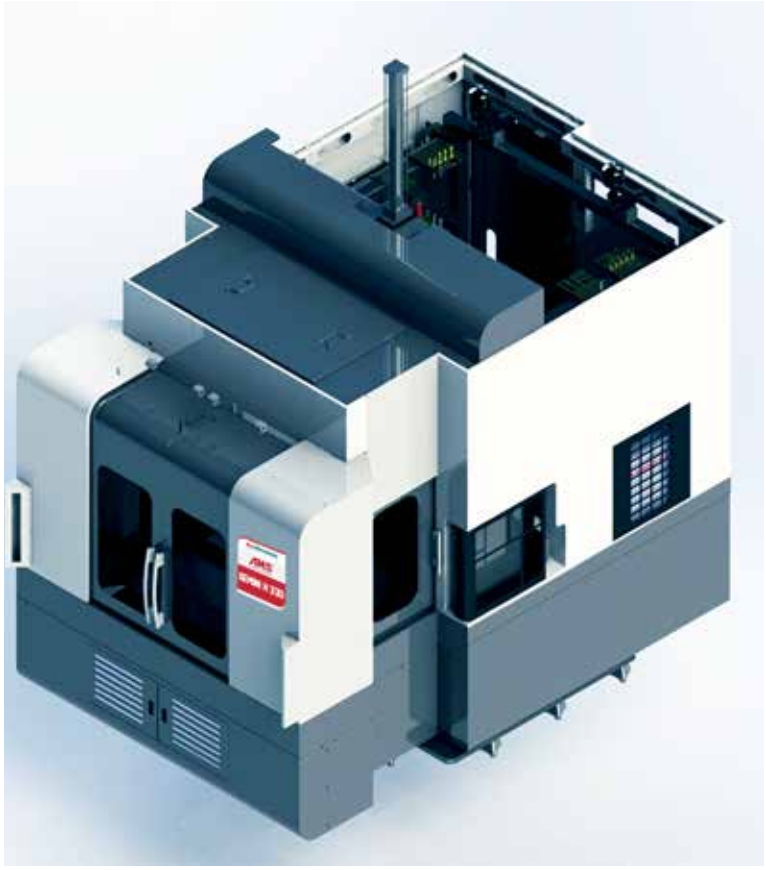
I believe the reason why its machines are so reliable is because AMG focuses on customer satisfaction."

Deepak Dixit
Manager
(Machine Shop)
ASK Automotive P Ltd

We thankfully acknowledge: Fm-PBW Bearings Pvt Ltd, Satani Forge & Turn, Rolex Rings Pvt Ltd, Automotive Valves Pvt Ltd, Echjay Industries Pvt Ltd, ASK Automotive P Ltd,

Single Machine: **DOUBLE THE WORK!**

The Gemini-H-330, a unique, indigenously developed machine from Ace Manufacturing Systems (AMS), has numerous technical innovations and specification suiting industry needs to maximize productivity in the cost competitive components machining market.



The multipurpose, high-precision, twin-spindle horizontal machining center is adaptable, productive and robust. This machine covers wide range of machining operations like milling, drilling, tapping, reaming and contouring, and more. Gemini-H-330 can be used either as a standalone machine or as CNC modules in an agile or hybrid manufacturing systems. These modular design twin-spindle machining centers can provide maximum productivity in large-scale manufacturing, virtually replacing two machines while providing the highest reliability and quality levels.

Unique mechanisms

The drum type tool magazine in the machine is positioned in such a way that it does not interfere with the axes movements or the component swing on the turn table. It has a tool changer, with a unique gripper arm design, which can accommodate 48 tools in total, with 24 tools per spindle having a maximum tool weight of 8 kg. In the parking condition, a separate door is not required to isolate the machining area and ATC area as

is conventionally provided in other machines. The door is attached to the tool change system itself that automatically isolates the ATC area from coolant and chip entry; thus, leading to a reduced tool change time.

Compactness

The compact design is well suited for line production systems because of its smaller floor print and lower front width. This machine occupies a floor space of approximately 2400mm X 4250mm (10.2 m^2).

Designed along the lines of a modular concept, the work piece is stationary and the spindle transverses in all 3 axes. This is why a gantry can be easily interfaced to a line of machines for different setups. The work piece could be clamped through three different options—turn table, index table or fixed pallet. Another feature is the turn table is used in the standard configuration machine, which combines the advantages of a pallet changer at a lower cost and also results in lower cycle time thereby increasing productivity.

Benefits

The machine helps automotive, locomotive, tool-room and sectors pertaining to all engineering industry, by increasing the cutting time to idle time ratio of the machine; thus, improving the productivity. The machine has the potential to deliver almost two times the productivity, with a footprint that is slightly larger than that of a single spindle machine. It has an economic advantage—it reduces shop's maintenance expense as the two spindles (machining two work pieces) share a common fluid system and machine resources. The cumulative benefit of all this consolidation is lower cost per component compared to a single spindle machine. CNC Plus

Highlights

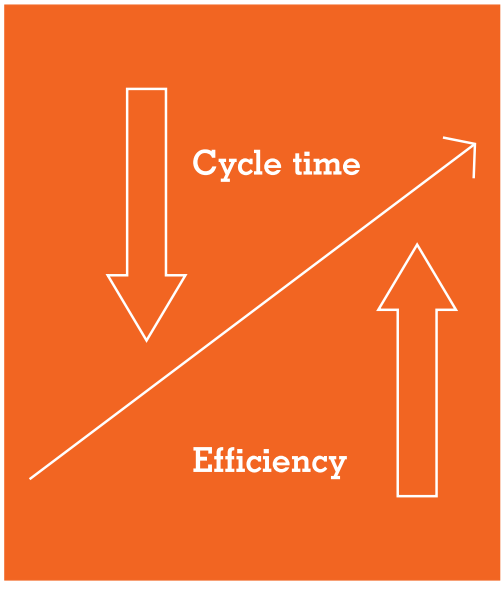
- *Small footprint*
- *Can machine versatile materials*
- *Uses Finite Element analyses to ensure static and dynamic stability*
- *Economical advantage*
- *Has powerful axes, spindle motors and tool capacities, with spindle distance of 330 mm for work piece flexibility*

We thankfully acknowledge the support of Ace Manufacturing Systems
To know more contact us: connect@acemicromatic.com

Produce More from **EXISTING STATE OF THINGS**

Manufacturing components as per drawing at a lower cycle time and reduced cost is essential to ensure competitive production costs, on time delivery & higher profit. Continuing the education series, this edition features the threading operation on turning centres and insights on how to leverage all aspects of turning. A perceptive read...

Reduction in cycle time, competitive production costs and improved quality, plays important role in enhancing productivity especially in large volume production and high value batch production. In the highly competitive market, customers determine the price of a product and entrepreneurs need to continuously fine tune the costs to realise profits. Machine utilisation has a major impact in reducing the manufacturing cost of components. Although it is difficult to reduce material cost, the cycle time & hence machining cost can be substantially reduced. Increasing machine up time and improving productivity requires adopting best machining practices.



This article will help CNC users to machine parts intelligently, through use of simple problem solving techniques.

In mass production, small inefficiencies *pull down the productivity*. Only periodic reviewing and revamping of the programs and processes can eliminate the accumulated inefficiencies.

These inefficiencies are no reflection on your in-house machining skills and your capability to remedy them.

A thorough audit could be just the definitive action that helps manufacturers get the most out of their existing setup.

First choice

Find a machine in a machine: Weed out wasteful tool motions and re-sequence machining operations with the existing setup. This does not call for any investments. What it needs is a close hard look at the existing state of things and a little course correction.

Ace Micromatic firmly believes in being close to you and assisting you at various stages of the complete life cycle of your CNC machines.

We understand that your biggest challenge is to continuously improve productivity and quality of your end products, so as to remain cost competitive. In our endeavour to address these challenges, Ace Micromatic Group would like to help you, make the best use of your CNC machines.

Our focus is to *'help you and make a positive contribution to your Business'*

Most common application on Turning Centres are:

General Turning
- External
- Internal

Grooving
- OD grooving
- ID grooving
- Face grooving

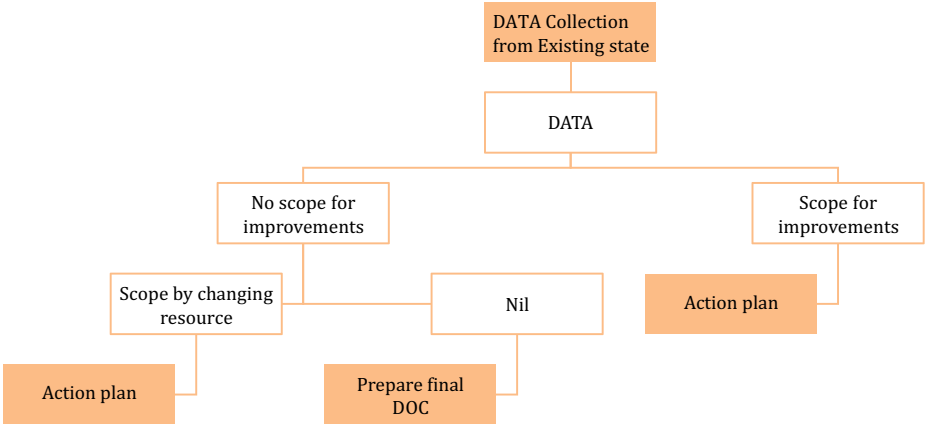
Threading
- External
- Internal

Drilling

In this edition, we will talk about Threading on Turning Centres and factors influencing the following:

Tool life	• Less than recommended • Frequent insert breakage/chip off • Abnormal wear
Cycle time	• Run time for a given component, cycle start to M30 • Average cycle time of a batch may not be actual cycle time of a single part machined. • Need to look into those, factors which are contributing in reducing total efficiency and take action to eliminate/improve.
Quality and aesthetic of part produces	• Machining part as per drawing dimensions. • Even though dimensions are within limit but aesthetically part may not be good. • Need to look into those factors which are affecting the quality and aesthetic of part and take action to eliminate/improve.
Operators interventions	• Operator's interventions in production is the major cause of reducing productivity and morale of operators. • Insert breakages • Chip breaking issues • Frequent/unscheduled insert change • GD&T repeatability problems • Accidents due to improper cutting methods • Need to identify process/method which can eliminate operator's intervention in production activities.
Machine, cutting tool and work holder abuse	• Improper tool entry/exit. • Input material stock/size variations • Improper cutting tools

Flowchart



Purpose

1. Enable us to visualise the:

- Existing process
- Machining techniques
- Resources (cutting tools, work holding, machines)

2. Provide the inputs for:

- Improvements
- Bench mark the cycle time
- Best utilisation to cutting tools & machines
- Man power efficiency
- Machine shop capacity
- Quality of parts machined
- Safety
- On time delivery

3. Help prepare road map for continual improvements

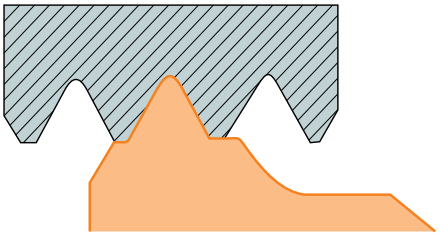
- Our worksheets and method of analysing data collected from existing machining will help you to audit the existing machining method and make necessary correction if there is scope for improvements.

Auditing data collected from existing process

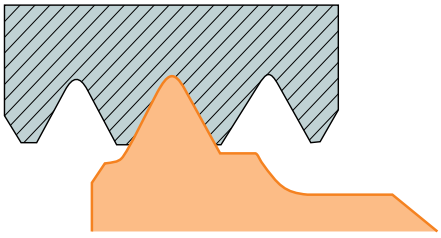
Tool life in threading applications:

- The inserts' life is determined by contact time, cutting method and cutting parameters used, if machining is under ideal conditions. We need suitable grade of inserts, (ID or OD) insert to perform the threading operation. Unnoticed small inefficiencies will pull down production and increase cost per part because of increased down time and high tool consumption.

Thread choice



Full profile thread



Partial profile thread

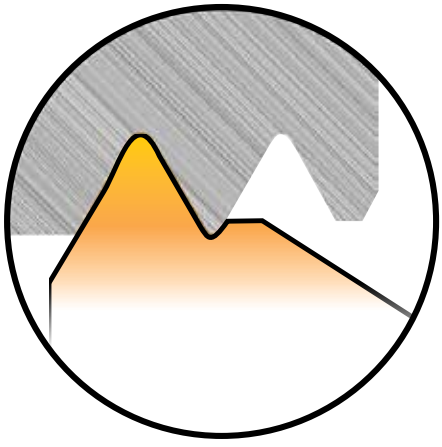
Full profile thread

Preparation:

Before doing threading operation we need to prepare OD/ID for external/ internal thread.

Thread height and major/minor diameter of external/internal thread in full profile thread controlled by insert as shown in the picture. Hence control of pre turned diameter in external thread and pre bore diameter in internal thread is very important.

Excess material left on OD/ID will be rubbed or peeled by full profile insert hence produce sharp edge or burr on thread also reduces tool life.



Solution:

- Pre turned diameter must be maintained within ±0.02.
- Periodically checked and corrected.
- Difference of major diameter and minor must be equal to thread height as per insert for the given thread.
- Control X offset of threading tool.

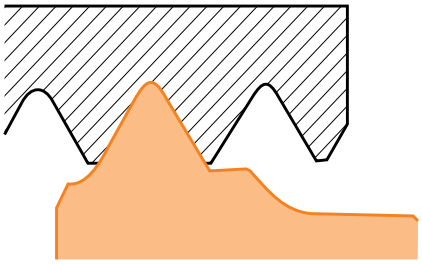
Partial profile thread

Preparation:

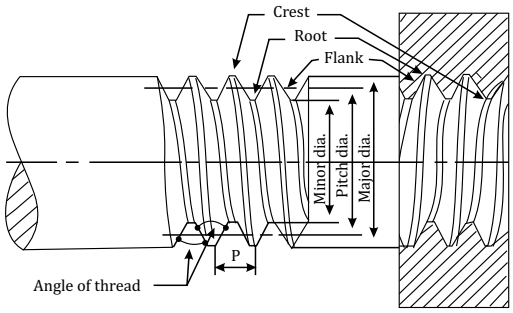
During partial thread major diameter in external thread and minor diameter in internal thread are having a wider tolerance.

For external thread major diameter will be lessor than nominal diameter.

For internal thread minor diameter will be bigger than nominal diameter.



Example: M20 x 2 pitch



Screw thread nomenclature

Solution:

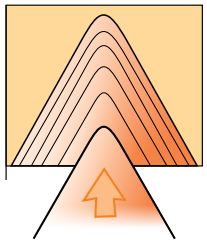
- Find average Diameter for major & minor diameter and fix tolerance of ±0.05.
- Periodically checked and corrected.
- Control X offset of threading tool.

External	Major Ø		Pitch Ø		Minor Ø	
M20x2	19.962	19.682	18.663	18.503	17.797	17.271
		-0.038 -0.318		±0.08		±0.263

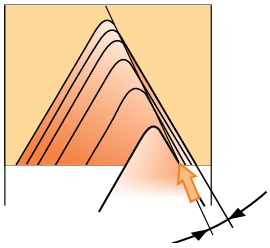
Internal	Major Ø		Pitch Ø		Minor Ø	
M20x2	20.000	20.501	18.701	18.913	17.853	18.210
		+0.501		±0.106		-0.147 +0.21

ISO metric thread Pitch cutting methods:

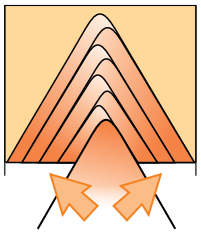
0.5	0.75	1.0	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6



In smaller pitch thread height is smaller (0.63 * Pitch). If we use flank entry, thread base get weaken and possibility of thread tear can happen.



Better chip flow and improved tool life.



Better chip flow, improved tool life and reduced insert contact length.

Thread on the following materials:

Brittle	Tensile	Soft
• Do not use idle passes in brittle material, since the material won't deform while threading. • Since the brittle materials are abrasive in nature, idle passes will reduce insert life. • Use average cutting speed (Vc)	• Use only one idle pass, more idle passes may lead to work hardening, built-up edge and reduce insert life. • If you are using flank entry method and zig zag method, do not use finishing allowance. By using finishing allowance the final cut happens at centre of thread and both edges of inserts engage and results in chattering, reduced insert life, sharp edges and burr on thread. • Use average and above cutting speed (Vc)	• Do not use idle pass, using idle passes may lead to work hardening, built-up edge and reduce insert life. • If you are using flank entry method and zig zag method, do not use finishing allowance. By using finishing allowance the final cut happens at centre of thread and both edges of inserts engage and results in chattering, reduced insert life, sharp edges and burr on thread. • Use maximum recommended cutting speed. (Vc)

Optimum threading cycle parameter for FANUC on the basis of Pitch:

Pitch		Program format for FANUC
• 0.5	• Q1=30 Q2=100	G76 P010060 **Q1** R0 G76 X Z P **Q2** F Q1= Minimum depth of cut Q2= First depth of cut Use Q1 and Q2 under 1:4 ration Note: • Idle passes and Q values determine the insert life • Values given are subject to machine, work hold, tool used and material condition. CNC Plus
• 0.75	• Q1=40 Q2=110	
• 1.0	• Q1=50 Q2=120	
• 1.25	• Q1=60 Q2=140	
• 1.5	• Q1=70 Q2=180	
• 1.75	• Q1=70 Q2=200	
• 2.0	• Q1=70 Q2=220	
• 2.5	• Q1=80 Q2=250	
• 3.0	• Q1=90 Q2=300	
• 3.5	• Q1=100 Q2=350	
• 4.0	• Q1=100 Q2=375	
• 4.5	• Q1=110 Q2=400	
• 5.0	• Q1=110 Q2= 400	
• 5.5	• Q1=120 Q2=420	
• 6.0	• Q1=120 Q2=500	

We thankfully acknowledge the contribution of Mr. Kashinath Patnasetty
To know more contact us: connect@acemicromatic.com

TV 600 2X

The 4-axes Vertical Turning Lathe with Tailstock, TV 600 2X, is a compact and ergonomic turning centre with multiple tooling options that result in high material removal rate.

Benefits of the TV 600 2X

- Productive - Tooling options enable parallel cutting and balanced cutting resulting in higher material removal rate
- Accurate - Vertical type spindle results in better dimensional stability for even unbalanced components
- Ergonomic - Vertical loading enables safety and loading comfort
- Configurable - Multiple axes and tooling options available
- Compact - Small machine foot print, better floor area
- Sturdy - Built with high-quality cast iron

Examples of Application


Transmission Shaft


Differential Housing


Piston


Tripod Housing

TCV-540

new Launch

Column Moving Drill Tap Centre that has been designed with flexible configuration to ensure high productivity. It has a compact footprint and includes a coolant tank and pallet changer.

Benefits of the TCV-540

- Effective flow of chip and coolant on the base itself
- Flexible configuration with rotary tables with hydraulic lines on both sides

Cutting edge features

- Drill Tap Centre with faster & lighter turn table
- Compact footprint: 1800 x 3200 mm
- Column moving type: DTC similar to imported machines
- Pocket tilting type ATC with 1.8 sec chip-to-chip time
- Turn table changing time: 3.5 sec with 200 kg load per side
- 400 x 760 mm table per side: to accommodate UCAM 200 size rotary table on either side
- Spindle speed of 10000 rpm (Direct drive)
- Rapid traverse of 50/50/50 m/min

To know more contact us: connect@acemicromatic.com

CALENDAR – TECH CENTRE TRAINING CALENDAR FOR YEAR 2017–2018

APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
10–11 Chennai CNC Lathe Programming Siemens	9–11 Gurgaon CNC Lathe Programming Fanuc	5–6 Pune CNC Lathe Maintenance	5–7 Bangalore CNC Lathe Programming Fanuc	1–3 Gurgaon CNC Lathe Programming Fanuc	6–8 Bangalore CNC Lathe Programming Fanuc
12–14 Bangalore CNC Lathe Programming Fanuc	11–13 Chennai CNC Lathe Programming Fanuc	6–7 Bangalore CNC Lathe Maintenance	6–8 Chennai CNC Lathe Programming Fanuc	3–5 Rajkot VMC Programming	11–13 Pune CNC Lathe Programming Fanuc
17–18 Rajkot CNC Lathe Maintenance	12–13 Chennai CNC Lathe Maintenance	6–8 Gurgaon VMC Programming	10–12 Pune CNC Lathe Programming Fanuc	4–5 Pune CNC Lathe Maintenance	12–14 Coimbatore CNC Lathe Programming Fanuc
18–20 Coimbatore VMC Programming	14–16 Pune CNC Lathe Programming Fanuc	14–16 Coimbatore VMC Programming	12–13 Gurgaon CNC Lathe Maintenance	17–19 Chennai VMC Programming	13–15 Bangalore VMC Programming
19–20 Gurgaon CNC Lathe Maintenance	14–16 Rajkot CNC Lathe Programming Fanuc	15–17 Chennai CNC Lathe Programming Fanuc	12–14 Coimbatore CNC Lathe Programming Fanuc	17–19 Coimbatore VMC Programming	14–16 Chennai CNC Lathe Programming Fanuc
20–22 Chennai CNC Lathe Programming Fanuc	16–18 Coimbatore CNC Lathe Programming Fanuc	17–19 Pune VMC Programming	13–15 Chennai CNC Lathe Programming Fanuc	20–22 Pune VMC Programming	14–16 Rajkot CNC Lathe Programming Fanuc
23–25 Pune VMC Programming	17–19 Bangalore CNC Lathe Programming Fanuc	21–23 Bangalore VMC Programming	14–16 Rajkot CNC Lathe Programming Fanuc	23–24 Coimbatore CNC Lathe Maintenance	20–21 Gurgaon CNC Lathe Maintenance
24–25 Chennai CNC Lathe Maintenance	18–20 Chennai VMC Programming	22–23 Coimbatore CNC Lathe Maintenance	21–22 Chennai CNC Lathe Maintenance	29–31 Chennai VMC Programming	22–23 Chennai CNC Lathe Maintenance
26–27 Coimbatore CNC Lathe Maintenance	23–24 Aurangabad CNC Lathe Maintenance	22–24 Chennai VMC Programming	25–27 Aurangabad VMC Programming		26–28 Aurangabad CNC Lathe Programming Fanuc
28–29 Pune CNC Lathe Maintenance					

OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH
5–6 Rajkot CNC Lathe Maintenance	4–6 Pune VMC Programming	3–5 Pune CNC Lathe Programming Fanuc	3–4 Gurgaon CNC Lathe Maintenance	4–6 Pune CNC Lathe Programming Fanuc	5–6 Pune CNC Lathe Maintenance
7–8 Pune CNC Lathe Maintenance	7–8 Bangalore CNC Lathe Maintenance	5–7 Gurgaon VMC Programming	3–5 Bangalore CNC Lathe Maintenance	7–9 Bangalore CNC Lathe Programming Fanuc	6–7 Bangalore CNC Lathe Maintenance
10–12 Coimbatore VMC Programming	7–9 Gurgaon CNC Lathe Programming Fanuc	7–9 Chennai VMC Programming	6–7 Pune CNC Lathe Maintenance	14–16 Coimbatore VMC Programming	9–10 Chennai CNC Lathe Maintenance
12–14 Chennai VMC Programming	8–10 Bangalore CNC Lathe Programming Fanuc	13–15 Bangalore CNC Lathe Programming Fanuc	11–13 Chennai CNC Lathe Programming Fanuc	15–17 Chennai VMC Programming	9–10 Rajkot CNC Lathe Maintenance
25–26 Coimbatore CNC Lathe Maintenance	10–11 Chennai CNC Lathe Maintenance	13–15 Coimbatore VMC Programming	18–20 Gurgaon CNC Lathe Programming Fanuc	20–22 Aurangabad CNC Lathe Programming Fanuc	12–13 Aurangabad CNC Lathe Maintenance
	15–17 Coimbatore CNC Lathe Programming Fanuc	19–21 Aurangabad VMC Programming	20–22 Pune VMC Programming		14–16 Coimbatore CNC Lathe Programming Fanuc
	16–18 Chennai CNC Lathe Programming Fanuc	28–29 Coimbatore CNC Lathe Maintenance	23–24 Aurangabad CNC Lathe Maintenance		15–17 Chennai CNC Lathe Programming Fanuc
	17–19 Rajkot VMC Programming	28–30 Chennai CNC Lathe Programming Fanuc	23–25 Coimbatore CNC Lathe Programming Fanuc		21–22 Coimbatore CNC Lathe Maintenance
	23–24 Gurgaon CNC Grinding Programming				23–25 Pune VMC Programming
	28–29 Aurangabad CNC Lathe Maintenance				

Focusing leads to **WINNING STRIDES**

Established in 1988, Auto CNC Machining has come a long way since its humble beginnings in a shed to a sought-after precision machined component supplier. Read on to know more on their journey so far...

Auto CNC Machining was established by promoters of Ace Designers as a means to get a detailed assessment of CNC machines built by Ace Designers. At that time, the concept of CNC machines was relatively new in job shops; it was important to get regular feedback on performance parameters as well as the demand in the market as the customer base primarily comprised SMEs.

The back story

Aravind B M, Managing Director, Auto CNC Machining Ltd averred, "In the eighties, most components were produced using regular lathes. There was a significant potential for flexible and automated turning machines, but their performance needed to be tested and evaluated Auto CNC was founded on this premise."

In the first phase of establishing the company, three different lathes manufactured by Ace Designers, viz., Auto Lathe, CNC Lathe LT20, and the CNC Chucker LC 16 were installed. "Initially the customers would give the drawings and raw materials, and manufacturing the parts as per the drawings was done. While completing the jobs, measurements were made on the performance of all the parameters of the machines."

As the economy improved in the automotive sector, the volumes picked up and the need to deliver more parts in shorter time frames became a necessity. Thus as the demand for CNC machined parts grew rapidly. The company went on to increase its fleet of CNC lathes to meet the new and increased demand, which resulted in better exposure and branding. Aravind added, "Having the brand Ace Designers on our side helped us in becoming a recognised and reputed CNC component manufacturer."

Carving its own path

Over a period of time, Auto CNC established itself as a reliable component supplier catering to various Indian industries and MNCs in the automotive, consumer durables, infrastructure, medical equipment, machine tools and engineering sectors. It's cliental include big names such as GE Healthcare, Bosch, Ace Designers, and so on.

Aravind also attributes the growth of the company to the changing mindset of customers. He stated, "Initially, customers had a perception that only non-critical parts should be outsourced, while critical parts should be machined in-house. With time they realised our capabilities and started giving us components that were critical to their product quality and function." The company began to serves the global market with 25 percent of its business volumes accounting for exports to the USA, Europe, Mexico and China, and more.

State-of-the-art base

Auto CNC has steadily grown over the years. It has two manufacturing plants in Bengaluru with around 180 employees. The manufacturing plants have a variety of CNC machines like Water Jet Cutting, Small routers, Gantry routers, CNC lathes, VMCs, HMCs, Turn Mill centers, HMCs with multi pallets, etc. The quality control infrastructure is equipped with two Zeiss CMMs along with many calibrating and inspection equipment ensuring that the quality of products are never compromised.

Speaking on how the company is streamlining its process, Aravind asserted, "We have incorporated many lean practices, like the supermarket concept, quick changeover fixtures, pull system, etc., to attain operational excellence. These have worked brilliantly for us as we have received accolades and awards for the same such as the Global award in year 2008 in the 'Fulfilment Category' for delivering on time, the Excellence Award in 2016 in the US. The recent award won was for the 'Stay Lean to Go Fast' category at the GE India Supplier Day."

Talking about how Auto CNC stands out amongst peers, Aravind voiced, "Auto CNC Stands out amongst its peers because of its committment to supply defect free components to customers,delivered on time at an affordable price.Auto CNC team is dedicated to resolve any short comings in the above so that customer satisfaction is not affected and focusing gain on long term relationship rather than short term gain. With a focus on continuous improvement of all our processes. Our aim is to keep growing at a healthy double digit pace and to add value to all the stakeholders and to society." CNC Plus

» Having the brand Ace Designers on our side also helped to become a recognised and reputed CNC component manufacturer."

Aravind B M
Managing Director
Auto CNC
Machining Ltd

We thankfully acknowledge the contribution of Mr. Vinayak D. Kamath
To know more contact us: connect@acemicromatic.com

SAFEGUARD YOUR MACHINING CENTRE

Always use, confirm, monitor and maintain

DOING THIS	PREVENTS	LEADS TO
Safety & electrical supply		
Four pole ELCB rating 30mA tripping current	Leakage current	No electrical shock and no electronics, CNC package failure
415V AC Phase to Phase	Electrical and electronic parts failure	Increase in machine reliability
Dedicated earthing with Neutral to earth leakage < 3V and resistance of <100 Ohms	Transfer of leakages causing electrical shocks	Safety of human and machine
AC temperature is maintained as per the recommendation	Failure of electrical and electronics components	Increase in machine reliability
Machine environment		
Dust, moisture, standing water, liquid and rain free environment	Machine and machine elements getting affected	Increase in machine reliability
Non exposure of machine and CNC to direct sunlight or other heat sources	Overheating of machine and machine elements	Increase in machine reliability
Machine Foundation as per recommendation	Vibrations of machine, rejection of components & reduction of tool life	Better accuracies in machined parts. Increase in tool life and reliability of machine
Pneumatic supply to machine		
Dry air and required air pressure as per recommendation	Moisture entry to Pneumatic elements, Spindle taper and other machine elements	Increase in machine reliability

DOING THIS	PREVENTS	LEADS TO
Compressor with recommended capacity of volume and pressure	Interruption in machine operation and downtime.	Increase in machine reliability
Maintain the air pressure for different functions of the machine	Interruption in machine operation in various functions	Increase in machine reliability
Spindle and axes lubrication		
Servo spin 12 oil level and flow in FRL unit for spindle lubrication	Lack of mist lubrication to spindle taper and taper wedging	Increases the reliability of ATC and spindle
Recommended use of axes lubrication oil/ grease (Oil-Servo way 68, Grease -LHL X100)	Lack of lubrication to axes slide and other moving assemblies	Better accuracies of machine, reliability of axes & other subassembly parts
Coolant properties		
Use of non-synthetic coolant, water based oil emulsion	Coolant taking away of lubrication oil	Better lubricity, Reliability of parts and machine
Concentration of coolant > 5%	Heating of machined parts and cutting tool	B etter tool life, quality of components and machine reliability
Use DM water for mixing the coolant oil ***Properties*** / ***DM Water*** / ***Coolant*** Hardness / <200ppm / 550 to 600ppm Chloride / 25ppm / 50ppm PH / 6.7 to 7 pH / 8.5 to 9 pH	Rusting of machine element, paint peel off, skin allergies	No harm to Human and increases corrosion resistance of raw material, paint and sump life of coolant
Hydraulics		
Servo system 68 grade oil	Interruption in machine operation in various functions	Increase in machine reliability and uninterrupted machine operation
Clean and replace as per recommandation		
Machine external and internal	Collection of swarf and sludge	Increased machine reliability and maintains cleanliness of machine
Filter – Hydraulic, pneumatic, cabinet, AC, coolant	Interruption in machine operation in various functions and clogging of filters	Increase in machine reliability and uninterrupted machine operation
Oil and Coolant level as per recommendation		
Hydraulic oil, FRL oil, lubrication oil, ADU gear box oil, hydro pneumatic cylinder oil, spindle chiller oil and cutting coolant	Interruption during operation	Increase in machine reliability and uninterrupted machine operation

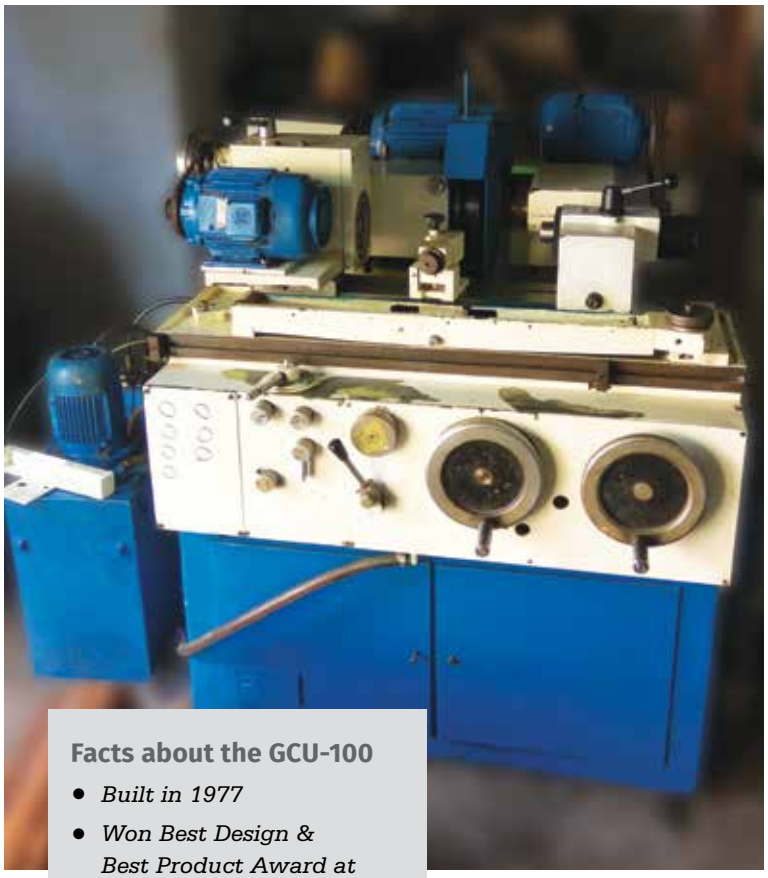
We trust that you have found the above details useful and wish to assure you that compliance will help your team to ensure better reliability and machine uptime.
If you need any further assistance, please do not hesitate to contact our local service support.

Email: customercare@acemicromatic.com | www.acemicromatic.net

To know more contact us: connect@acemicromatic.com

Designed for Precision, **BUILT FOR DURABILITY**

Micromatic Grinding Technologies Ltd (MGT) has produced over 4500 Grinding machines that are working across the globe. One of the machines, it's most proud of is the GCU-100, which was built in 1977 and is still going strong. Read on to know more...



Facts about the GCU-100

- *Built in 1977*
- *Won Best Design & Best Product Award at IMTEX 1979*
- *Value for Money*
- *High RoI*
- *Rigid, Reliable and produces consistent results*

Micromatic Grinding Technologies Ltd (MGT) is the first and oldest company in the Ace Micromatic Group. Since 1973, the name 'Micromatic' has become synonymous with 'Precision Grinding' in India. "It has come a long way since its inception in 1973, and today manufactures a wide range of External, Internal, Universal, Centreless and Special Purpose Cylindrical Grinders & now Non-round Grinding machines also in CNC, PLC and Hydraulic versions. These hi-precision grinders are built to the exacting requirements of the customers from its four manufacturing plants in Ghaziabad (near New Delhi) and Bangalore." **In 1977, MGT built its first hydraulic cylindrical grinding machine—the GCU-100.** The machine was designed for hi-precision OD grinding operations and was installed at the Bengaluru premises of Pragati Automation Pvt Ltd.

The journey...

Managing Director, Pragati Automation, Mr. AV Sathe, also had a hand in designing this machine. His company manufactured

machine tool accessories such as copy turning attachments, copy milling valves, chucking cylinders, etc., and needed a machine that could easily complete finishing tasks. It has since then increased its product range to include a wide variety of turrets, tool discs, tool holders and automatic tool changers (ATC) for machining centres. Till 2013, this machine was used at the company's shop floor to produce precision components, helping them achieve less than 2-3 µ size accuracy and 0.3 to 0.4 surface finish on the components consistently. It has helped Pragati produce world-class components with its finishing capability, so much so that 75 percent of the company's ATCs manufactured are exported. **With timely maintenance and upkeep, the machine has been giving almost the same performance and accuracy as it did during its early years in service.**

New innings...

To enhance its processes, in April 2015, Pragati Automation bought a new CNC Grinder and replaced the manual grinder. This machine was sold to Renuka Engineering at almost the same price at which it was purchased nearly four decades ago. **Thus, proving that the GCU-100 (ECO-200U, it's present Avatar) was an excellent investment for companies, in terms of RoI and residual value.** The machine has since been reconditioned by the new owners, to begin its new adventure with them for a long time to come. We wish M/s. Renuka Engg. many, many more years of profitable growth from this prized investment. CNC+Plus

We thankfully acknowledge the support of Mr.N.K.Dhand

To know more contact us:
connect@acemicromatic.com

Accolades GALORE!

AceMicromatic MIT (AmiT) has recently had the honour of being presented with the prestigious 'Best Business Partner of the Year' award by Triveni Turbines Limited (TTL).

Arun Mote, Managing Director of TTL, India's leading manufacturer and exporter of turbines, presented the award to Chandrashekar Bharathi, Managing Director and Member of the Board, AmiT.

At the ceremony held on April 11, 2017, Mote said, "We are extremely happy with the quality of products, and service commitment provided by AceMicromatic MIT, in support of our Industry 4.0 and IoT initiatives. TPM-Trak Production Analytics and Digital Factory products have created significant impact in our factory and is helping us leap to the next level of operational excellence. We are happy to partner with AceMicromatic MIT in this journey." AmiT has been a first mover and leader in the space of Real-time OEE, Industry 4.0, Traceability, Digital factory and IIoT solutions.

The ceremony where AmiT received the 'Best Business Partner of the Year' award

We thankfully acknowledge the support of Mr. Chandrashekar Bharathi

Making Sustainability the **BENCHMARK!**

On March 7, 2017, the Ace Micromatic Group (AMG) fulfilled one more of its objectives to further enhance its relationship with its customers in Gujarat by inaugurating its long-awaited Technology Centre in Rajkot. A report on the happenings...

For AMG, the decision to build a Technology Centre stemmed from the Group's belief that success was truly achieved if its customers were successful in their endeavours. The state-of the-art Technology Centre is spread across a sprawling area of 9,400 sq ft and will provide a myriad of training programs such as basic CNC machine operating, advance training, machine maintenance training, component cycle time study, fixtures solution, production improvement and so on. The inauguration ceremony began with a ribbon cutting ceremony and a tour featuring all the facilities of the Technology Centre.

Breaking ground

Gracing the occasion as Chief Guest was Parasbhai Doshi, Managing Director, Echjay Industries, and Guests of Honour were Sureshbhai Santoki, Chairman, Amul Group; Manishbhai Madeka, Managing Director, Rolex Rings, and Anand Patel, Director, Fm-PBW Bearings. The inauguration was attended by approximately 1500 customers and delegates.

Shrinivas G Shirgurkar, Managing Director, Ace Designers welcomed the delegates and visitors to the grand opening. He said, "Over the years, we have observed that the key to effective use of our machines has been hands-on training of the operators.

In this endeavour, we already had six Technology centres across India, which we are strengthening through the latest one in Rajkot with a strong belief that the Gujarat region will lead the future growth and would be our key focus area."

Speaking at the ceremony and sharing the history his company shared with AMG, Doshi shared, "We have been associated with Micromatic since 1987–88, and I am proud to say that even now the first machine we bought from AMG is not only in working condition but is still productive."

Speaking on the company's efforts, Benidict Machado, Managing Director, Ace Designers asserted, "We create value for money. Whenever people think of turning, they think of Ace Designers, and that's why you should choose us. In the market, people might not know Ace Designers, but everyone knows the Jobber, and this is our achievement."

Santoki while addressing the audience informed, "Our association with Micromatic has a long standing one—ever since we bought first machine, we haven't gone to any other vendor to buy CNC, VMC machines. We always rely on AMG, as they sort all our queries within a quick turnaround time."

Sharing a similar experience, Madeka voiced, "We started business in 1967, then in 1988 our customers started demanding that they also want components to be machined, and so it was a big challenge for us as we were new to machining, and then we came to know about Ace Designers and placed 1st order for 24 machines, Machado & his team supported our needs well, and now I can proudly say' we have more than 100 machines from Ace Micromatic Group."

Gearing for growth

During the ceremony, Directors of AMG made Technical presentations on new products and Technology launched at IMTEX 2017 and also shed light on the suitable products for Gujarat's industry.

NK Dhand, Chairman, Micromatic Grinding Technologies, averred, "Our aim is to provide cost effective solutions, and reduce costs per component with zero defect and zero downtime."

Adding to this, P Ramdas, Managing Diretor, AMS, elucidated, "We aim to grow in double digits, and this will only be possible with customers support. We are constructing new hangar of 10000 sq ft. through which we would be increasing our manufacturing capacity by an additional 1800 machines to cater to the needs of all our customers."

Upgrading the region

During the event, AMG also showcased its all-round solutions to help the industry upgrade itself to the future with regard to IIoT.

TK Ramesh, Director, Micromatic Machine

Key stats

- *Number of customers in Gujarat - 1435*
- *Number of Ace machines in Gujarat - 2840*
- *Number of guests attending the event - over 1500*
- *Machines @ Technology Centre - the SJ400-LM, SLC-16-LM from Ace; the VMC 850V from AMS, and SGA-40 from MGT*

Tools while giving a presentation on the services of one of the Group companies explained, "Smart manufacturing and IoT helps you decide whether you are productive, helps you track and trace your parts, check your profits with very little human intervention. It is in line with this that we bring to you a manufacturing company that is also providing comprehensive IIoT solutions."

More than learning

The Technology Centre has an array of machines from the Group to help serve its customers better. Apart from conducting programs to help its customers with operations, application proving, maintenance and effective machining knowledge, the centre will also be used to provide better support in terms of service and spares. CNC Plus

CNC Plus
Ace Micromatic Group Newsletter

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Reader's VIEWS

CNC plus magazine was a chance discovery for which I am truly glad since I found it to be extremely informative. It was a delight reading about the innovations that are happening closer to home and globally. The language is kept lucid and the style is reader-friendly.
It would be great if you could add me to your subscription list.
Wishing you further success!

Warm regards,

Yogesh Munjal
Managing Director
Munjal Showa Ltd

Building a **BETTER INDIA**

In its endeavour to give back to society, Micromatic Machine Tools (MMT) recently completed a CSR project. The project—WINS Project in Schools (Washrooms in Schools)—comprised building toilet blocks for school children at the Shardashram School in Shirgaon, a small village near Pune.

The project began on April 4, 2016, and took around four months to complete. It was headed by Project Leader & Business Head, MMT Pune, Prashant Deshpande, with other members of MMT being part of the team, viz., Santosh Rege (Team Leader), Santosh Totagi, Sunil Kumar, Anil Doundkar and Kishor Kadam.

The school, which is near the company's Pune facility, lacked sanitation facilities. The Pune branch of MMT initiated this project to facilitate good hygiene. On August 15, 2016, the date of the handover, eight toilet blocks comprising four male and four female toilets with ample supply of water and proper sewage facilities in place, was open for use for the students and faculty at the school. CNC Plus

We thankfully acknowledge the contribution of MMT Pune

The inauguration of the sanitation block at the Shardashram School

The Shardashram School at Shirgaon

The children at the inauguration of the sanitation facility

Snapshot Technology Events 2016-17

Forgetech

Organisers: Association of Indian Forging Industry (AIFI)
Venue: Delhi
Date: Dec 3–4, 2016

The AIFI Biennial Conference-cum-Exhibition: Forgetech India gave exhibitors a platform to exhibit their products and capabilities in forging. The Ace Micromatic Group has played a key role in supporting this event by being one of its prime sponsors.

TK Ramesh handing over the trophy to one of the winners

Plastivision

Organisers: All India Plastic Manufacturer's Association (AIPMA)
Venue: Mumbai
Date: Jan 19–23, 2017

Ace Mciromatic Group participated at the 10th edition of Plastivision India. The event organised by AIPMA provides a conducive single platform for all manufacturers, dealers, buyers and end-users in the plastics industry to network, knowledge share and learn. The company displayed its solution—the LTP 16-Pipe Turning machine, well suited for the field of Plastic, and received excellent feedback and interest from visitors.

The Micromatic team from the Mumbai branch

SteelFAB

Organisers: Expo Centre Sharjah
Venue: UAE
Date: Jan 16–19, 2017

SteelFab, organised every year by the Expo Centre Sharjah is the definitive trade exhibition for steel fabrication, metal working and metal manufacturing industry. At the event, Ace Micromatic displayed products —1060V machining centre and the LT 20C Classic—and once again made its presence felt in the global market.

Ace Micromatic Group's booth at SteelFab

IMTEX

Organisers: IMTMA
Venue: Bangalore
Date: Jan 26–Feb 1, 2017

Organised by IMTMA, IMTEX brings to the forefront an exhaustive range of domestic as well as global innovations and technological refinements in the complete product segment of metal-cutting machinery. The event—largest in South East Asia—is the ultimate platform for the manufacturing sector. As always, the Ace Micromatic Group showcased a wide and vast variety of its product range that included CNC Turning Centres, Machining Centres, Grinding Machines and also IOT solutions, at its booth, which was one of the largest ones at the event.

R V Deshpande, Minister for Higher Education and Tourism, Government of Karnataka at AMG stall

Ace Micromatic Group one of the major sponsor for Forgetech India

Micromatic team at the stall

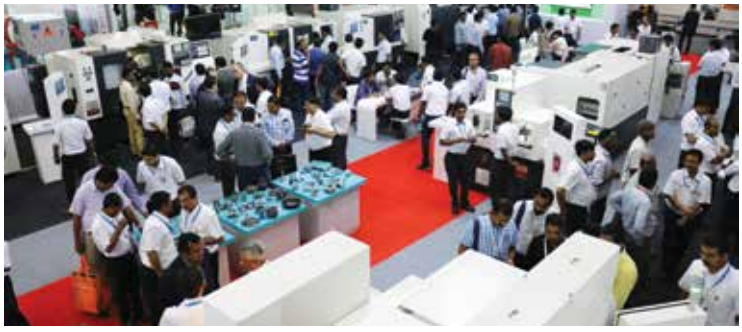
Visitors showing interest in Ace Designers Pipe Turning Machine

Customer discussing their application requirements

Customers discussing enquires with MMT team

Visitors keen in seeing machine operation

The Ace Micromatic Team



The large number of vistors at the AMG booth at IMTEX

INDIA

NORTH

Delhi
T: +91 11 22414232
E: mmtdel@acemicromatic.com

Faridabad
T: +91 129 4047000
E: mmtdel@acemicromatic.com

Gurgaon
T: +91 124 4745500
E: mmtdel@acemicromatic.com

Ludhiana
T: +91 97791 78296
E: pjbsales@acemicromatic.com

Rohtak
T: +91 99966 91055
E: mmtdel@acemicromatic.com

Rudrapur
T: +91 95570 30224
E: mmtukd@acemicromatic.com

SOUTH

Bangalore
T: +91 80 40200555
E: mmtblr@acemicromatic.com

Bangalore - Bommasandra
T: +91 80 27834836
E: mmtbms@acemicromatic.com

Belgaum
T: +91 99800 02597
E: mmtbgm@acemicromatic.com

Chennai - Ambattur
T: +91 44 40440700
E: mmtche@acemicromatic.com

Chennai - Sriperumbudur
T: +91 44 40440700
E: mmtche@acemicromatic.com

Chennai - Tambaram
T: +91 044 22265531
E: mmtche@acemicromatic.com

Coimbatore
T: +91 422 4506183, 6588595
E: mmtcbe@acemicromatic.com

Hyderabad
T: +91 40 23070496
E: mmthyd@acemicromatic.com

Ranipet
T: +91 4172 272732
E: mmtrpt@acemicromatic.com

Trichy
T: +91 431 2443066
E: mmttry@acemicromatic.com

EAST

Jamshedpur
T: +91 657 6539931
E: mmtcal@acemicromatic.com

Kolkata
T: +91 33 26710158 / 100
E: mmtcal@acemicromatic.com

WEST

Ahmedabad
T: +91 99242 89892
E: mmtbom@acemicromatic.com

Aurangabad
T: +91 240 2552309
E: mmtaur@acemicromatic.com

Indore
T: +91 73899 39190
E: mmtindr@acemicromatic.com

Nasik
T: +91 253 6610254
E: mmtbom@acemicromatic.com

Pune - Chakan
T: +91 21 35322002
E: mmtpune@acemicromatic.com

Pune - Chinchwad
T: +91 20 40712111
E: mmtpune@acemicromatic.com

Kolhapur
T: +91 230 2460444
E: mmtkop@acemicromatic.com

Mumbai
T: +91 22 26861009
E: mmtbom@acemicromatic.com

Mumbai - Thane
T: +91 22 25829062
E: mmtbom@acemicromatic.com

Pune - Shirur
T: +91 98906 23217
E: mmtpune@acemicromatic.com

Rajkot
T: +91 281 6548369
E: mmtraj@acemicromatic.com

INTERNATIONAL

Germany
T: +49 1722316688
E: debjoyr@acemicromatic.com

China (Shanghai)
T: +86 (21) 5866 5031/32
E: raguramachandranc@acemicromatic.com

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TRICHY

Micromatic Machine Tools Pvt Ltd

#240/241, 11th Main, 3rd Phase,
Peenya Industrial Area,
Bangalore – 560 058
Tel.: +91 80 40200555
Email: connect@acemicromatic.com

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