

MOULDING THE FUTURE

Die & Mould
players on
AMG's role
in their growth



Plus

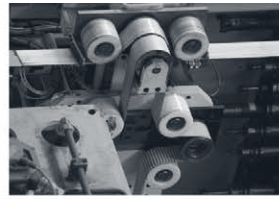
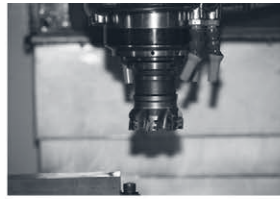
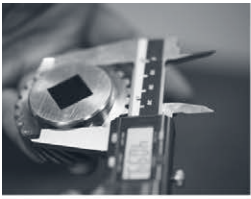
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machine series

How to improve
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EXCLUSIVE

THE BEST
JUST GOT BETTER!
THE LAUNCH OF THE ALL NEW

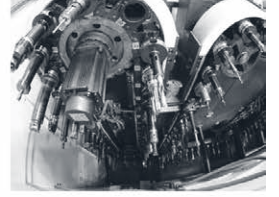
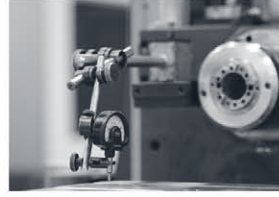
Micromatic 360



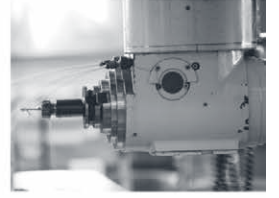
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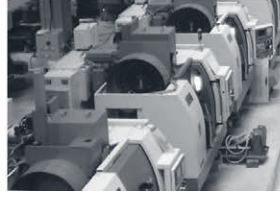
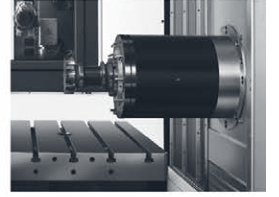
ALL YOU NEED IN MACHINING



Industry 4.0
& IoT solutions



Automation solutions



A New Beginning

AceMicromatic Group is delighted to announce that Harish B is now the new CEO of Micromatic Machine Tools. For the past 20 years, he has been playing a key role in bringing the company to its present pivotal position. He has brought a wealth of knowledge and experience to Micromatic, and with his skilled guidance and relentless support, the company will continue to grow manifold and reach newer heights.



AceMicromatic Group has been a long-time partner to the players in the die & mould industry, ceaselessly supporting them and contributing to their growth. The Group leverages this medium to highlight the opportunities that have come its way from these partners and the trust built with them.

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Editor:
Hari Kumar S
 harikumars@acemicromatic.com
 Sub-Editor:
Savitha A Isaac
 savithaa@acemicromatic.com
 Design Editor:
Harish M
 harishm@acemicromatic.com
Risvaana Barven
 risvaanab@acemicromatic.com

Content & Design:



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Towards a Better Tomorrow

Hello!

Welcome back to our interaction forum 'CNC Plus'. We hope things have got better and you are on the road to the new normalcy in good health along with your family and your colleagues. We are eagerly doing our very best to get back to growth and are glad to bring out the new issue focussed on the Die & Mould sector.

This sector has always been playing an important role in manufacturing and holds a special position in our growth journey. It is expected to get an even bigger role in the days ahead. In the current situation, when there is a greater impetus on self-reliance and a closer supply chain, the sector's normal growth rate of 9 - 10 percent can be expected to double to 16 - 18 percent as the dependency on Chinese imports is being rethought.

The MSME sector, our core customer constituency, has been bearing the brunt of the slowdown and the pandemic outbreak. This sector is of critical importance as it accounts for the employment of over 100 million people, close to 45 percent of manufacturing output, and about 40 percent of the nation's exports. It is important that the sector collectively organises itself to make use of the relief measures and funding packages that have been put together by the Government and the agencies involved. We, on our part, have been contributing through service drives, training programs, innovative service offerings and finance options with our partners. One new service initiative MICROMATIC 360 will also be launched soon.

Though there will be a dip in the growth rate as economists predict, India will be better off in comparison to other countries due to its larger domestic markets. However, we will all need a fundamental rethink of our business models.

Though there will be a dip in the growth rate as economists predict, India will be better off in comparison to other countries due to its larger domestic markets. However, we all will need a fundamental rethink of business models where we will have to reimagine our products and services to keep ahead. We must pay more attention to leadership and ways of connecting and interacting internally in companies and externally with markets, channels, and customers. We should invest in technologies and infrastructure that can be optimised, scaled, and shared to suit the changing needs. This must be easily done without putting any strain on the user community.

Happy reading and growing! I hope and wish you all a safe and satisfying festive season ahead.



T K Ramesh
Managing Director
Micromatic Machine Tools





Mentice



***Micromatic* 360**

LIFE CYCLE SERVICES

LAUNCHING SOON

At Micromatic, our bonds go far beyond machines & mandates, to build enduring relationships with you and offer best in class service and support.
Now the best is getting better!

With a goal to become a comprehensive post-sales service provider, we have now risen one step further by embarking on an exciting new chapter that aims to provide 360 degree coverage to machine life cycle needs.

Visit the link below and register now to witness the launch of Micromatic 360, at a virtual live event.



Event Date
21st Oct 2020



Event Time
3 - 4 PM

micromatic360.com



Indian Govt Receives ₹12L-crore Proposals Under PLI Scheme

As what could be seen as a major push to Prime Minister Shri Narendra Modi's PLI scheme, proposals worth ₹12 lakh crore have been received under the new scheme to boost electronics manufacturing. The Union Minister for IT and Communications, Shri Ravi Shankar Prasad, while speaking at a recently held industry event, revealed that close to ₹90,000 crore have been transferred by way of direct benefit transfer.

"...All the top mobile manufacturers and their contract manufacturers have applied in the scheme including five global champions and five national champions," he informed. Global companies have collectively pledged to make mobile phones and components worth ₹12 lakh crore in the coming five years, he added. Out of this, ₹7 lakh crore worth of items will be exported from India and direct and indirect jobs will be given to ₹12 lakh.

He further added that about eight to nine manufacturing lines have shifted from China to India.

The government had notified three schemes on April 01 for the promotion of electronics. These were schemes for manufacturing of electronic components and semiconductors; modified electronics manufacturing clusters (EMC 2.0) scheme; and production-linked incentive (PLI) scheme for large-scale electronics manufacturing.

PM: "We should tap into ₹7L-crore toy industry"

Prime Minister Shri Narendra Modi has urged start-ups and entrepreneurs to "team up for toys", highlighting the fact that India's share in the ₹7-lakh-crore global toy market is extremely small. He asserted that the country has the potential to be a hub for the industry.

Shri Modi, in his monthly address, 'Mann ki Baat', spoke on a range of issues but kept the focus on the theme of Aatmanirbhar Bharat.

He asked start-ups to be "vocal for local" and urged them to develop computer games in and based on India.

"You will be surprised to know that the global toy industry is of more than ₹7 lakh crore. Such a big business, but India's share is very little in this. Now, just spare a thought for a nation which has so much of heritage, tradition, variety, young population. Will it feel good to have such little share in the toy market?" he asked.

"To my start-up friends, to our new entrepreneurs I say team up for toys. For everybody, it is the time to get vocal for local toys," he added.

India's Manufacturing Sector Activity Shows Signs of Growth

The IHS Markit India Manufacturing Purchasing Managers' Index, an indicator of the economic health of the manufacturing sector, has risen to 56.8 in September 2020, from 52 in August. This is the highest reading and second straight month of expansion since January 2012. A reading over 50 indicates economic expansion.

In April, the index contracted, after showing growth for 32 consecutive months. For the first time since March, output expanded in the Indian manufacturing sector in August. Production growth was largely driven by greater client demand for Indian goods following the resumption of business operations, according to the surveyed firms.

"The upturn was led by an improvement in customer demand as client businesses reopened, after lockdown restrictions eased amid the Covid-19 pandemic," IHS Markit said. It added that output and new orders expanded at the fastest paces since February – recording a 21-month high.

The decline in foreign exports weighed slightly on overall new orders as firms cited subdued demand conditions from abroad. However, new business received by Indian manufacturers expanded at the fastest pace since February. According to the survey, Indian manufacturers remained optimistic for the next 12 months. Positive sentiment was attributed to hope of the passing of the coronavirus pandemic, improving client demand, and new business wins.

Govt in Talks with Russia for Covid-19 Vaccine

The Centre is in consultations with the Russian government for exploring the possibility of cooperation between the two countries for advancing the Covid-19 vaccine in India, Parliament has been told.

The Central Drugs Standard Control Organisation (CDSCO) has informed that it has received information about one Covid-19 vaccine developed and approved in Russia, Minister of State for Health, Ashwini Choubey informed the Lok Sabha.

Further, the Indian Council of Medical Research (ICMR), an autonomous organisation under the Department of Health Research, has informed that as per the information available from WHO draft landscape

of Covid-19 vaccine, globally there are 36 vaccines which are under various stages of clinical trials. "Of this only 2 are Indian candidates (Bharat Biotech International Ltd and Cadila Healthcare). None of the candidate vaccines so far has completed all stages of clinical trial," he said in a written reply.

Elaborating on the steps taken by the government for timely availability of Covid-19 drugs and vaccination, Choubey informed that CDSCO has approved the manufacturing and marketing of three drugs – Remdesivir Injectable formulation, Favipiravir tablets, Itolizumab injection – for restricted emergency use in the country for treatment of coronavirus infection.

Foreigners Allowed 74% in Indian Defence Manufacturing Under Automatic Route

The Department for Promotion of Industry and Internal Trade (DPIIT) has issued a press note permitting foreign direct investment (FDI) of up to 74 percent under automatic route in the defence sector.

Until now, 100 percent foreign investments were permitted in the defence industry – 49 percent under the automatic route and government approval was required beyond that. The revision in the investment-cap comes amid Prime Minister Shri Narendra Modi's call to make India self-reliant at a time when the pandemic has disrupted supply chains globally.

The press note added that foreign investments in the defence sector would be subject to scrutiny on the grounds of national security.

Infusion of fresh investment up to 49 percent in a company not seeking industrial licence or which already has government approval for FDI in defence shall require 'mandatory' submission of a declaration with the defence ministry in case of change in equity/shareholding pattern or transfer of stake by existing investor to new foreign investor within 30 days of such change.

"The investee/joint venture company along with the manufacturing facility should also have maintenance and life cycle support facility of the product being manufactured in India," it said.

Licence applications will be considered and licences given by the DPIIT in consultation with the Ministry of Defence and the Ministry of External Affairs. The decision will take effect from the date of Foreign Exchange Management Act notification.

Cover
Story

Plus

Moulding the Future

The Indian Die & Mould industry has been a major contributor to the nation's economy. Here's knowing the substantial role **AceMicromatic Group** has played in the success of the industry and its players by relentlessly catering to them with its innovative and cutting-edge solutions...

After having undergone an awe-inspiring transformation, the die and mould sector of India is today teeming with unprecedented opportunities. Catering to a variety of specific demands from a number of booming sectors including Automotive, Plastic, Electronics and Electrical, Healthcare, and Machine Tools, the industry finds itself better equipped to offer high-quality offerings.

As per Tool and Gauge Manufacturers Association of India (TAGMA India), the tooling industry was to grow from the market size of ₹15,000 crore in 2018 to ₹20,000 crore by 2020 with 9-10 percent growth with about 13 percent CAGR. However, the current pandemic phase has been a major disruption to the plan but it's just a matter of time for the goal to be accomplished.

AceMicromatic Group (AMG) takes pride in having made a contribution to the growth and success of the players of the die and mould arena of the country. Following is a roundup of the prominent leaders keen to present a peek into the industry and its demands and how AMG has been a consistent support in fulfilling them.

Towards growth

It's 25 years since the die making company has been incepted. Currently run by 80 to 90 employees, it has 20-25 machines from AMG's AceManufacturing Systems (AMS). "It all started with us buying just one AMG machine. It's been some time now that we get two machines every year from the Group," shares R Krishnakumar, Managing Director, R.K. Engineering Works.

Shedding light on the tyre industry he adds, "There is a good business in the industry. As the tyre keeps running, there is a constant wearing; the die wears as well. Within 60,000 km, that is within 6 or 7 months, tyres need to be replaced. They



"I totally recommend AMG for having offered us 100 percent quality machines. A team attends within two hours of being called for service. In case they cannot personally come, they offer support over a call to address the issue."

R Krishnakumar

Managing Director
R.K. Engineering Works

can be run to 1,00,000 km but the driver insists on changing the tyres much before that. The demand for tyres increases with every vehicle because eventually there is wear. Due to the current pandemic

situation, the market had been down but we are picking up now."

"We want to make good quality dies for which we need to purchase a few machines. With AMS machines, we have created a die that has been supplied to three locations and is running well," he informs.

Staying strong

The Covid 19 times are difficult for all of us but R.K. Engineering Works ensured that its employees were paid during the lockdown. "We suffered a lot of losses during the lockdown but now we have slowly opened our factories with all the precautions in place. Although we are not sure how the future will pan out, it's important that we stay strong in such a situation," he states.

Plans ahead

Krishnakumar divulges the company's plans to build a 50,000 sq ft plant with at least 50 percent of Ace machines and hopes AMG will lend the support needed. He holds AMG in high regard especially for the service received. "They attend within two hours of being called for service.



In case they cannot personally come, they offer support over a call to address the issue. I totally recommend AMG for having offered us 100 percent quality machines."

Forging ahead

Incepted in 1995 by the company Managing Director, S Subramanian, Sivaramakrishna Forgings is mainly into the manufacture of precision hot forging components and machined components. From 2010, the company's growth, which until then was steady but a tad slow, became rapid. "From the year 2012, our footprint expanded globally and we forged into direct exports. We started to supply machined components from the earlier raw forgings," shares S Seetharaman, Director, Sivaramakrishna Forgings.

The company primarily supplies to the Auto sector (60 percent). "We cater to the needs of the truck and trailer divisions. The parts we make go into transmissions and clutches. We now plan to also concentrate on high-precision components for the non-automotive sector so that we can cover for whenever there is a regression in the Auto sector," he further shares.

A win-win situation with AMG

Sivaramakrishna Forgings' association with AMS began in the year 2012. "AMG, being a very big



"AceMicromatic Group is renowned for its high business ethics. Its machines' quality is world-class and after sales service is exceptional with an extremely approachable team. Whenever we get any new orders for our new machining solutions, our first choice is AMG."

S Subramanian
Managing Director
Sivaramakrishna Forgings

Group, offered a wide variety of machines even then. It was well-known in the field and through the word of mouth we realized that AMS had what we needed and we then connected with the team," he reminisces.

"It has been a win-win situation for us. Since we had started with simple turned parts, it was quite easy for a big group like Ace to cater to our needs. Currently, we have around 11 Turning Centres and 3 VMCs including one with a one meter bed length," he adds.



"AMS is globally known for its quick service support. They support all their customers on time. That's precisely the reason we have steadfastly been partners with AMS. It's been a long-term relationship which is to last."

S Seetharaman
Director
Sivaramakrishna Forgings

The company, in Seetharaman's words, has never had any major breakdowns with the machines so far. "With respect to preventive maintenance support, AMS is equally supportive. AMS is globally known for its quick service support. The biggest positive it offers is a very quick turnaround time; it supports all its customers on time. That's precisely the reason we have steadfastly been partners with AMS. It's been a long-term relationship which is to last even longer," he further adds.

Seetharaman tells us of the machining that takes place with AMS machines, "We do pre-machine simple turning. We also machine components that we supply to customers in water pump hubs; these components have closer tolerances of 20 microns on the face."

Overcoming challenges

Pointing out to the sluggishness the Auto industry is presently witnessing, Seetharaman notes, "Although it's picking up, it will take time to gain back the growth achieved in the past. It will take at least another



Source: Sivaramakrishna Forgings

six to eight months to stabilise. All are aware that the auto recession is cyclical in nature; it's generally once in six years. We have witnessed lows in the past but, this year, the industry has been hit very badly due to the BSVI extension and GST. It's predicted that 2021 will revive the pace of growth."

On the challenges in the Die and Mould sector or the Forging industry, he highlights the dearth of skilled personnel as one of the major concerns. "Forging is a skill dependent industry. To abate this dependence, we have invested in high-technology machines such as CNC control hammers and CNC control presses. Nevertheless, getting skilled people remains one of the prime challenges of the industry. Thankfully, the Government has also made a note of it and is now stressing on automating processes."

Competence pays off

Established as The Southern Associates in 1987 by its Founder NP Chandranathan as a small-scale forging unit, Arihant Forgings is a key supplier of industrial and automotive forging components to many industries. Highly regarded in



"People who are into die making prefer high-end machines. When we get such solid support from AMS with same or similar specifications in its machines at an affordable price, it's only natural that we opt for them."

Raju Chandranathan

Partner
Arihant Forgings
(The Southern Associates)

the Forging industry in Chennai, the company has expanded its scope into value added processes such as manufacturing of Tools and Dies for forgings and machining of forged components.

"It was in 2003 that we bought our first AMS machine during the Bombay Machine Tool Exhibition.

Until then we were only into forging. We then ventured into our own machining facilities, which are now looked after by my father and brother. We have a forgingshop and a machine shop, and we supply parts to automotive companies. A wide range of qualified and ISO compliant components are made in our company," shares Raju Chandranathan, Partner, Arihant Forgings.

With about 100 employees, the company today has 4G drop hammers, three hammers in its Forge shop and 15 VMC machines in its machine shop.

The family-owned business has witnessed considerable growth over the past decades and today caters to key industries such as Mining, Railways, Automotive, Defence, Electrical and General Engineering. "We are into Automotive Engineering, Agriculture Engineering and also some Electrical components. Our 50 percent supplies are to automotive companies and another 30 to 35 percent to agricultural companies and manufacturing companies. The rest are for electrical manufacturers," he adds.

AMG's service stands out

Talking about AMG's association with Arihant Forgings, Chandranathan notes, "Immediate service is what we require whenever we have a problem, I highly recommend AMS, primarily for its prompt service and for also being highly cost-competitive. Additionally, I must mention its delivery period. The team has never failed to keep its commitment. I received my first machine in just three days' time."

"One of the major pain points as a manufacturer is machine stoppage, and when that happens one needs a service person to quickly attend to it. Thankfully, our machine downtime is really low due to AMS' best service team; they are able to depute a person in a very short span of time.



Source: Arihant Forgings (The Southern Associates)

In terms of service, I would rate it as number one when compared to other machines we have," he adds. According to him, people who are into die making prefer high-end machines. "When I get such solid support from AceMicromatic with same or similar specifications at an affordable price, it's only natural that we opt for AMS machines," he stresses. The company presently has four machines from AMG.

Indian engineers' competence

When asked regarding any issues he observes in the industry which should be addressed on priority, he points out to the dearth of relevant skills Indian machining engineers suffer from. "There is a dire need for them to enhance their skills. Their competence is questionable. We must all come together to make the changes needed in the industry and also ask the Government for its support to address the issue at various levels. While in college, their curriculum must involve engineering students' exposure to the industry for enhancing their knowledge and helping them develop relevant skills. They should come out of their academic institutions as employable engineers," stresses Chandranathan.

Holding on

To sail over the present times of crisis, the company has been providing moral and financial support to all its employees. "We strongly believe



Source: Sridevi Tool Engineers

"What is unique about AMS is their ability to cater to customers' exact needs. No effort is spared when asked to tweak any specifications to meet our requirements. The company's service is equally efficient."

Roopraj
GM – Operations
Sridevi Tool Engineers

that these trends will be the new normal. We must just do our best to improve our productivity and quality, and treat this time as an opportunity to supersede our past performances," he notes.

Learning from global counterparts

Sridevi Tool Engineers Pvt Ltd has been making plastic injection tools for the last 42 years. However, it's only after 2000 that it has shifted its complete focus on the Automobile industry. "Now almost

every tool that we manufacture is for the Automobile industry," shares Roopraj, GM – Operations, Sridevi Tool Engineers. The company has three plants that manufacture around 300 tools per year. "We cater to global demand. Although we export to many countries, our preference is domestic markets," he adds. Besides Automobile, Roopraj discloses that the company is now planning to add some more industries to cater to such as the White Goods. "Aerospace is another area we plan to foray into if any opportunity arises," he further informs.

Customization, AMG's strength

When asked about Sridevi Tools' association with AMG, and what according to him makes for the Group's USP, he notes, "What is unique about AMS is its ability to cater to customers' exact needs. No effort is spared when asked to tweak any specifications to meet our requirements. Its service is equally efficient. Now that it is venturing into additive manufacturing, which is going to be the future, it is on the right path."

Roopraj makes a valid point when he stresses on the lack of a system in India. "In countries such as China or Korea, there is a support system for each tooling. There are a lot of subsidiaries for support. In India, we don't have such a cluster. Efforts are on to build an ecosystem up to our standards, but there is still a lot to come in place. This is a huge disadvantage for us. Investment is also an issue in India. Unless that changes, we will not be able to meet Korean or Chinese capability to manufacture tools at a minimum time."

Love at first sight

TTB Tooling was inceptioned in the year 2015 by three partners Murali Kadam, Aditya Mishra, and Satwant Singh, all with a strong technical background. They recognised their respective abilities to run a company and quit the organisation they were earlier



Source: Sridevi Tool Engineers

working for to join forces and form TTB Tooling. Their efforts paid off with the company showing a multifold growth in a mere few years. "From Rs 40 lakh to Rs 26.7 crore business, our growth is a reflection of our focus on delivering quality products. We are the fastest growing tool-making company in India and we deliver moulds in a remarkably short time. Hence, we have aptly named ourselves TTB which stands for first Trust, then Try, and only then Buy," shares Satwant Singh, Joint Managing Director, TTB Tooling.

The company is into plastic injection moulds and caters to industries including Automotive, Packaging & Material Handling Solutions, Caps & Closures, White Goods, Household & Furniture. "It's majorly to the Automotive sector (60 percent share) that we supply and export to," he adds.

Suiting all requirements

With AMG, it was the heart that took the lead. "It was truly love at first sight with AMG machines. There was an exhibition in Pune in 2015 that we visited and a monochromatic machine grabbed my attention. On closer look, the construction and details such as ball screws etc. confirmed that we were to get the machine. Fortunately, the price also suited us. And this trust-based relation continued with we buying another in two and a half years.



Source: TTB Tooling

"It was truly love at first sight with AMG machines when we spotted them in an exhibition in 2015. This trust-based relation continued with we buying another in two and a half years. Today, we have five customized AMG machines."

Satwant Singh

Joint Managing Director
TTB Tooling

Today, we have five AMG machines. We have got them customized. We have made design changes in some machines; some needed attention to Z height and some minor changes in software have also been made," shares Singh. "The Group has a Technical Centre at Bangalore to implement all the changes we require. Secondly, a world-class level service; you can expect an engineer within 2 to 3 hours of making a call to them. The accuracy and finishing of AMG's machines make them our obvious

choice. And last, but not least is the cost. These are the advantages that have worked for us with the Group. The fact that we have 5 AMG machines out of our total 8 explains our commitment for each other," he adds.

"It's important to also mention the team's honesty here. We once needed a double-column machine from them. They didn't let us buy their machine saying it was still under observation. I had to buy another brand's machine. After having fully tested their machine, they then informed us that it was ready for use. We will be getting it from them soon. This is the kind of trust that we value and share with the Group," he notes.

Funding is an issue

Singh speaks on the issue that should have been addressed long back. "That is one of the major challenges that our industry suffers from. Getting funding from banks is difficult in the first place, and also the interest rates are very high," he states.

On the other hand, he thinks India now stands a chance since people are on a lookout for a second source for moulds other than China and Korea. "Especially, the Automotive sector has now started preferring local goods for their needs," he sums up on this optimistic note.

Seizing opportunities in crisis

The company has always been on a lookout for business ideas and implement them timely. The Covid-19 pandemic, though unfortunate, brought about opportunities for TTB Tooling, which according to Singh, could be leveraged with the aid of machines from AMS. It took the team around two days to produce the moulds for face shields with 850V/1060V AMS machines, which are compact, rigid and designed to achieve high accuracy in Die & Mould, Tooling, Medical, Aerospace applications to name a few.



Source: TTB Tooling

The team was able to produce the first piece OTS (Off Tool Sample) with 99.90 percent precision. "It took us a few hours to put the mould in production after fine-tuning. WhatsApp and other digital media used for advertisement and then mouth to mouth advertisement were a considerable help in getting us known. The people who bought from us also helped others to approach us. We were aired by All India Radio too. We distributed masks to many of the Corona warriors like the Police department, Medical staff, Medical institutions etc.," Singh informs. TTB Tooling is thankful to the AMS team for their continuous support and guidance in running the machines and keeping the production on during the lockdown that brought in innumerable challenges for both the companies including an immense disruption in the supply chain.

Localization is key

K-Lite Industries is into the manufacturing of lighting fixtures, predominantly in the outdoor segment of lighting. "It was started by my father about 43 years ago with just two employees. Today, we have a strength of about 750 people," shares Sharmila Kumbhat, Director, K-Lite Industries. Initially starting out work with Railways, Metros, and ICF, the company now has forayed into architectural lighting, outdoor lighting, high-end indoor lighting, and also technical lighting.



Source: K-Lite Industries

"We bought our first AMG machine three and a half years ago, and now have nine machines. This proves that we are highly satisfied with the machines, their productivity, and ease of operation. The fact that they are made in India makes their maintenance a lot easier."

Dilip Kumbhat
CEO
K-Lite Industries

Growing with AMG

"About three years ago, when we were looking to increase our productivity and precision, a friend recommended AceMicromatic. Although we were familiar with the Group, this recommendation helped make a choice. So, we bought our first AMG machine then and now we have its nine machines," informs Dilip Kumbhat, CEO, K-Lite Industries.



Source: K-Lite Industries

"I have not seen any delay in AMG's services. It also makes us proud that we are buying and supporting the Indian economy."

Sharmila Kumbhat
Director
K-Lite Industries

"This proves that we are highly satisfied with the machines, their productivity, and ease of operation. The fact that they are made in India makes their maintenance a lot easier. I have not seen any delay in their services. It also makes us proud that we are buying and supporting the Indian economy. So that's how our journey with AMG has been so far," he adds.

Going local

Sharmila speaks of herself as a highly pro-Indian person. "Hence, I am going to recommend an Indian manufacturer any day hands down. It's important to keep up with the cutting edge in our industry. As far as lighting is concerned, our biggest threat is the imports of products. So as a manufacturer, it's a constant endeavour to reduce costs and improve efficiency, productivity, and quality. So, the whole industry has to go hand in hand and if we can do that, we can sustain in the global market in the long run."

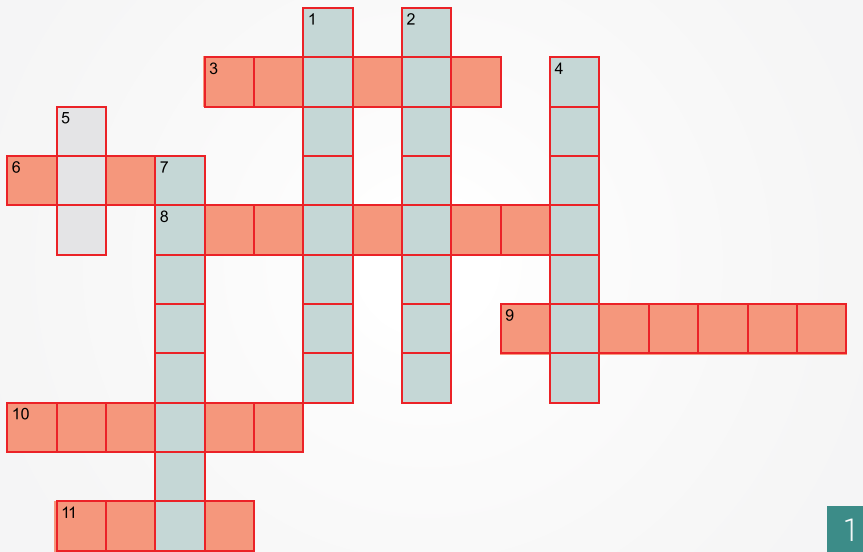
The Covid times are making K-Lite review and upgrade its products and processes. "We are currently working on designing for new product verticals and increasing efficiency of our existing range," she concludes. **CNCPlus**



Source: K-Lite Industries

Brain Teaser

Crossword



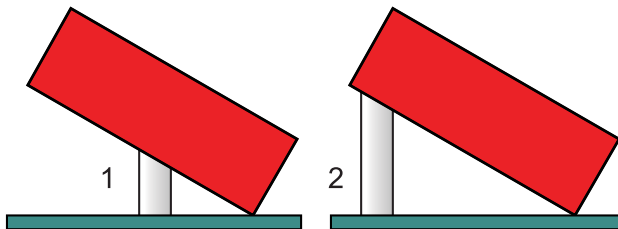
1

Across: **3.** A precision workholding chuck which centers finished round stock automatically when tightened. Specialized collets are also available in shapes for other than round stock. **6.** To enlarge and finish the surface of a cylindrical hole by the action of a rotating boring bar (cutting tool) or by the action of a stationary tool pressed (fed) against the surface as the part is rotated. **8.** A person who is skilled in the operation of machine tools. He must be able to plan his own procedures and have a knowledge of heat-treating principles. **9.** Machining a groove or undercut in a shaft to permit mating parts to be screwed tightly against a shoulder or to provide clearance for the edge of a grinding wheel. **10.** The act of centering or aligning a workpiece or cutting tool so that an operation may be performed accurately. **11.** The material that holds the abrasive grains together to form a grinding wheel.

Down: **1.** A defect in a casting caused by trapped steam or gas. **2.** The depth, or that portion of a gear tooth from the pitch circle to root circle of gear. **4.** The vibrations caused between the work and the cutting tool which leave distinctive tool marks on the finished surface that are objectionable. **5.** A cylindrical cutting tool shaped like a worm thread and used in industry to cut gears. hobbing - The operation of cutting gears with a hob. **7.** A coolant formed by mixing soluble oils or compounds with water. extruded - Metal which had been shaped by forcing through a die.

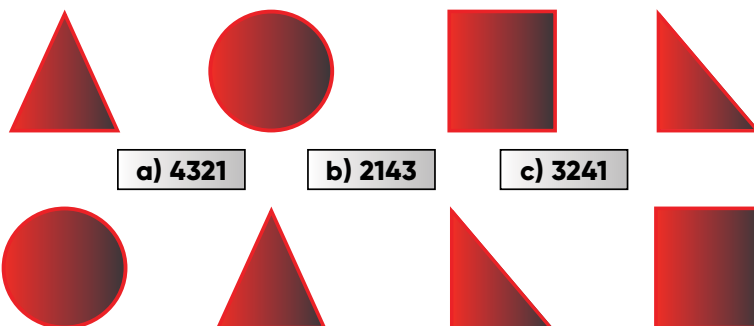
On which pole does the weight put the most pressure on?

1. #1
2. #2
3. The weight presses equally on both poles



2

What is the correct answer?



4

Start a fire



A camper is trying to start a fire with only a magnifying glass and sunlight. He slowly brings the magnifying glass 13 inches from the wood when it begins to smoke. At what distance should the magnifying glass be held to create a fire?

Options:

1. 10 inches
2. 13 inches
3. 30 inches
4. Not possible with this method

3

Answers

- 1** Across: **3.** Collet **6.** Bore **8.** Machinist **9.** Necking **10.** Truing **11.** Bond
Down: **5.** Hob **7.** Emulsion **1.** Blowhole **2.** Dedendum **4.** Chatter
- 2** This is essentially the Law of the Lever. The rectangle pivots about the point of contact with the floor. The farther the pole is from the pivot point, the less force it needs to apply to achieve the same torque (the torque needed to keep the rectangle static). Thus Pole 2, the pole farther away from the point of contact with the floor, applies less force on the rectangle. According to Newton's 3rd Law, the rectangle applies less force to Pole 2 as well. Therefore, the correct answer is 1.
- 3** Option 2 - 13 inches
The smoke indicates that 13 inches away is where the 'focal point' of the magnifying glass is located. Thus, the wood must remain there in order to successfully start a fire. 1234
- 4** If we take the order of arrangement for the first row as
Then based on this arrangement, the order of the second row is 2143
So the answer is option b) 2143 from the three options provided.

Excellence is a Constant



AMG has earned itself a reputation of a premier solutions provider in the machine tools industry. And since the best machines come from AMS, Ace Designers and MGT, the market leaders in milling, turning and grinding solutions respectively, the die & mould industry naturally banks on the Group. Additionally, MMT's wide network of over 60 sales and service offices, and application and CAD/CAM support through Micromatic Tech centres are other strengths that make AMG a relentless partner.

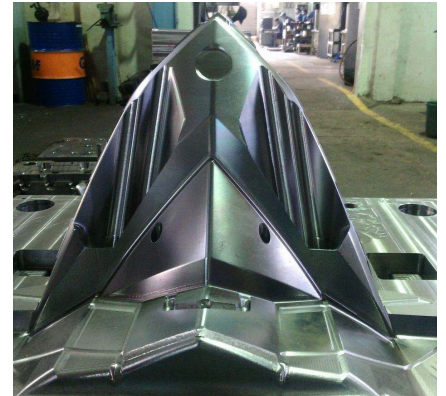
Die & Mould series

AMS offers best-in-class milling machines offering high quality and productivity, and well suited to meet the requirements of job shops, tool rooms, auto component dies, rubber dies, injection moulds and sheet metal dies. It also provides optimal solutions for Hot and cold forge dies, Medical dies

(tablet making), Tyre moulds and Bottle moulds. With a rigid structure reinforced with roller guideways, that help match the cutting capacity and maximum power of the motor, the machines are equipped with direct-drive system that couples the motor directly to the spindle rather than using belts.

This results in less vibration, heat and noise, providing a better surface finish, extreme thermal stability and quiet operation. These compact footprint machines are ideal for any shopfloor and a range of industries including Automotive, Medical and General Engineering.

Description		540V	740V	850V	1060V	1260V	1580V
Table Size	mmxmm	750 x 400	850 x 400	1000 x 510	1200 x 600	1400 x 600	1650 x 700
Max. load on table	kgf	400	400	500	800	1250	1500 / 2000
Travel X/Y/Z	mm	500/400/450	700/400/450	800/510/500	1000/600/600	1250/600/600	1500/800/600
Tool shank type		BT-40			BT-40 / BT-50		
Spindle speed	rpm	6000 / 8000 / 10000 / 12000					
Spindle power - Fanuc	kW	7.5 / 5.5 (Opt 11 / 7.5)		11 / 7.5 (Opt 15 / 11)	11 / 7.5 (Opt 15 / 11)		15 / 11 (Opt 18.5 / 15)
Spindle power - Siemens	kW	7.5 / 5.5 (Opt 7 / 10.5)		7 / 10.5 (Opt 9 / 13.5)	9 / 13.5 (Opt 11 / 16.5)		11 / 16.5 (Opt 16.5 / 18)
Spindle power - Mitsubishi	kW	7.5 / 5.5 (Opt 11 / 7.5)		11 / 7.5 (Opt 15 / 11)	11 / 7.5 (Opt 15 / 11)		15 / 11 (Opt 18.5 / 15)
Rapids	m/min	40/40/40	40/40/40	30/30/30	32/32/24	20/24/24	20/20/24
CNC System		OiMF+ / 828D / M80					
Floor space	mm	1850 x 2800	2100 x 2900	2200 x 2450	3110 x 2800	3300 x 2800	4000 x 3100
Weight	kgf	3400	3800	5500	6500	7500	10000
Chip Disposal		Rear / Front	Rear	Front / Rear	Front / Rear	Front	Side / Rear



Machine Features

Z-axis retraction function
 Program restart function
 Power failure detection feature
 Drop prevention

Air nozzle for dry cutting
 Linear scales
 Coolant gun
 Air Blast

Handheld MPG
 AC unit for electrical cabinet
 Tool rack stand
 Swiveling pendant

Jobber EVO series – 2-Axis CNC Turning Centres

Jobber EVO, an evolutionary edition of the Jobber series from Ace Designers, has been specifically designed and developed with inputs from our valued customers. The series not only builds upon the key Jobber Elite features, but also incorporates as many as 10 new user-suggested features as a standard offering.

The Jobber EVO series encompasses five new and improved Jobber machines with XL options where some of the major changes include increased turning lengths that measure from chuck jaw face, wider chip collection area, increased swing diameter, stepped up Z-Axis construction, a modified tailstock body with shorter clamping bolt

length, higher coolant tank capacity by 40 percent, hydraulic turret options and more.

The series starts with the Jobber EVO-JE 06 LM and ends with the Super Jobber EVO-SJE 10 LM. A series of lathes, the EVO series machines are also capable of die mould applications.

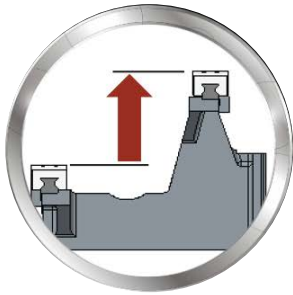


Machine Features

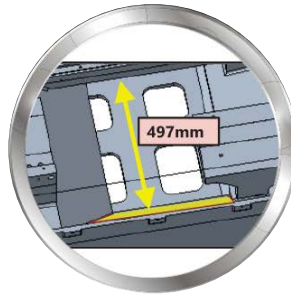
Powerful AC spindle motor
Step up Z-axis structure
High-speed 3500 rpm spindle
Thermally stabilised spindle
LM guideways

30 m/min rapid
Pre-tensioned ball screw support
0.45 sec station-to-station turret indexing time

100% ball bar tested
Laser calibrated axes
Separate coolant tank for easy maintenance
Powered by MachineConnect™



23% IMPROVED X-AXIS FEED STIFFNESS



60% INCREASED CHIP COLLECTION AREA



QUICK & EASY REMOVABLE GUARDS



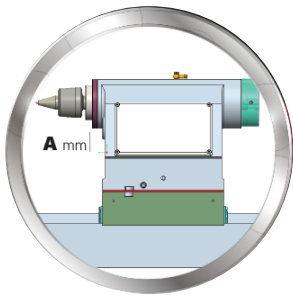
20% WIDE DOOR OPENING



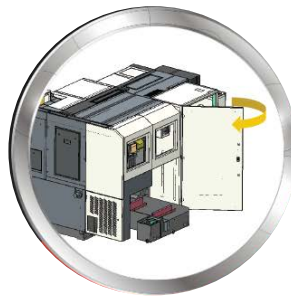
SWIVEL TYPE CONSOLE



MULTIPLE UTILITY OPTIONS



SHORTER CLAMPING BOLT LENGTH



ELECTRICAL CABINET DOOR REVERSE



DOOR OPENING TILL CHUCK FACE PLATE

	unit	JE 06 LM / XL	JE 08 LM / XL	SJE 06 LM / XL	SJE 08 LM / XL	SJE 10 LM / XL
Max. Turning Dia	mm	320	320	350	350	350
Max. Turning Length from Chuck Jaw Face	mm	300	400	300	400	525
Standard Chuck Size	mm	Ø200	Ø200	Ø200	Ø200	Ø200
Spindle Size / Nose		A2-5	A2-5	A2-6	A2-6	A2-6
Spindle Motor Power_Fanuc: (continuous / 15 min)	kW	5.5 / 7.5	5.5 / 7.5	7.5 / 11	7.5 / 11	7.5 / 11
Spindle Motor Power_Siemens: (continuous / 30 min. / S6-40%)	kW	7 / 8.4 / 10.5	7 / 8.4 / 10.5	9 / 10.8 / 13.5	9 / 10.8 / 13.5	9 / 10.8 / 13.5
Overall Dimensions (LxWxH)	mm	2141x1950x1740	2230x1950x1740	2141x1950x1740	2230x1950x1740	2460x1950x1740
Overall Weight (without packing)	Kg	~3350	~3450	~3425	~3500	~3625

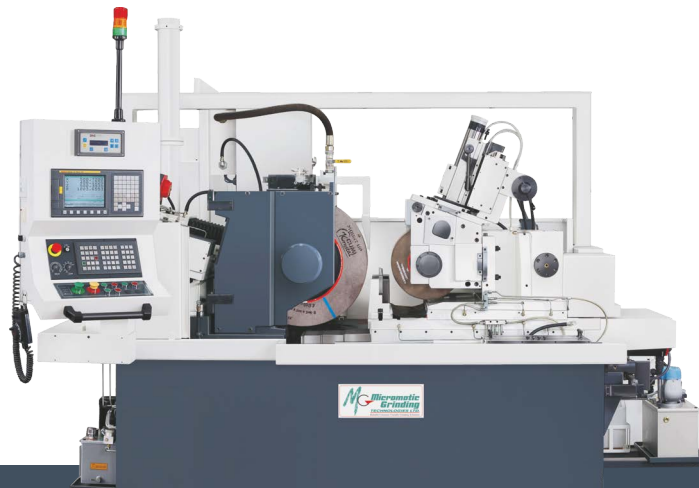
LM –Linear motion guideways
 XL –Hardened ground box guideways

Centreless Grinders

Coming in two variants, CNC and Hydraulic, these centreless grinders from Micromatic Grinding Tools (MGT) are ideal for efficient grinding processes that cater to fast-paced grinding needs. Both come with a ribbed structure of bed which ensures better static and dynamic rigidity and vibration damping.

Hydraulic Centreless Grinders

Conventional Centreless Grinder model CLG-5020 is most suitable for grinding small batches of components in through-feed or manual plunge operation.



Machine Features

Fixed type wheel head on the machine bed for maximum rigidity. Cantilever type design;

Grinding wheel spindle runs on hydrodynamic bearings made of lead-bronze alloy with oil lubrication;

The regulating wheel slide moves with the help of manually-operated lead screw, having micro feed adjustment unit of 1µm in-feed to meet high accuracy requirements for all work pieces;

Hydraulic copy profile dresser for grinding and regulating wheel dressing.

CNC Production Centreless Grinders

These machines are suitable for higher productivity and accuracy. The process is ideal for large batch production. The machines are configured for both through-feed and in-feed grinding. Various types of automation can be integrated with the machines for parts such as Engine Valves, U-J Crosses, Piston Pins, Shocker Tubes, Hydraulic Valve Spools etc.



Machine Features

Ribbed structure of bed ensures better static and dynamic rigidity and vibration damping;

Rigid out board support with high precision bearing for regulating wheel spindle;

Heavy-duty pre-loaded high-precision roller guideways for in-feed movement;

Spindle type dynamic balancing system for grinding wheel is available as an option;

Grinding wheel and regulating wheel spindles have undergone FEA analysis for maximum load in dynamic condition;

2-axis CNC grinding wheel dresser for any profile.

Capacity		CLG-5020/6015	CLG-6020/6025	CLG-6030 (TG)*
Minimum - maximum	mm	02-60	3-120	3-120
Max. length in plunge grinding	mm	195/145	195/245	295
Center height of wheel from floor	mm	~1050	~1150	~1150
Grinding Wheel				
Dia. x Width x Bore	mm	Ø510 x 200 x 254	Ø610 x 200 x 304.8	Ø610 x 305 x 304.8
Minimum dia.	mm	Ø370** (410**)	Ø410**	Ø410**
Max. wheel surface speed	m/s	45	45	45
Grinding wheel power	kW	11 (15)	22 (30)	30
Grinding Wheel				
Dia. x Width x Bore	mm	Ø305 x 200/150 x Ø127	Ø350 x 200/250 x Ø152	Ø350 x 305 x Ø152
Minimum dia.	mm	Ø240**	Ø270**	Ø270**
Speed Range	rpm	10- 210	10- 210	10- 210
Regulating wheel tilting	degree	±1°	±1°	±1°
Servo motor	Nm	11/12	18/22	18/22
Feedback system		Std: Motor encoder, Opt: Linear encoder		
Grinding Wheel Dresser		2 Axes CNC	2 Axes CNC	2 Axes CNC
Least count	mm	0.001	0.001	0.001
Servo motor - both axes	Nm	3/4	3/4	3/4
Regulating Wheel Dresser		Copying template design		
Sleeve dia.	mm	50	60	60
Feed movement increment on dia. - manual knob	mm	0.005	0.005	0.005
Traverse movement speed	mm/min	50 - 500	50 - 500	50 - 500
General				
CNC Control System		SIEMENS/FANUC		
Operation voltage	volts	415 ± 10 % AC 3 phase		
Machine weight	kg	5000 (Approx)	8000 (Approx)	8000 (Approx)

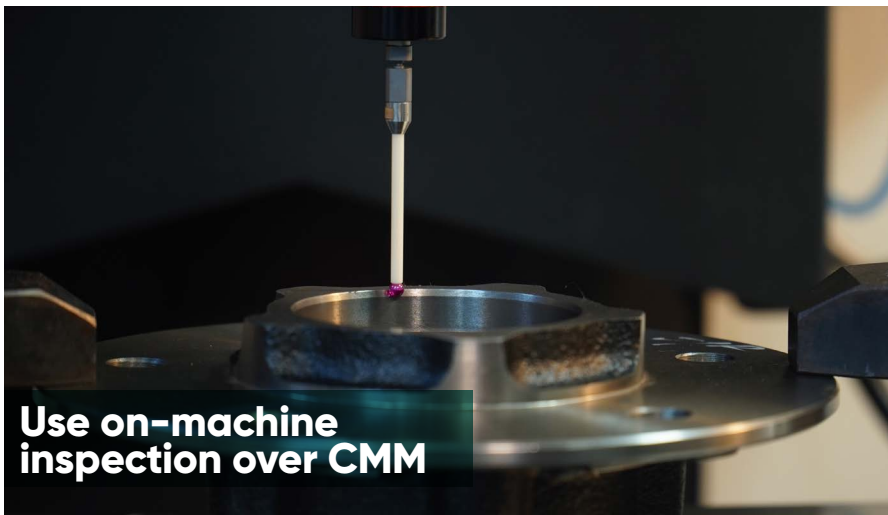
* Twin grip spindle

** Minimum wheel diameter may vary depending on Automation and Toolings

Since continuous development is taking place, design and specifications are subjected to change without prior notice and information. Colour shown in picture may not match with actual colour due to printing limitations

Improving Die Mould Machining

When aiming for better or improved die mould machining, the following tips can help overcome the challenges that hinder attaining the desired results.



Use on-machine inspection over CMM

For quality control of CNC machined workpieces, many shops use a coordinate measuring machine (CMM) that checks the geometry and dimensions of a finished part. However, for a shop owner, the CMM is far from a perfect solution. While this kind of inspection provides security for the customer, it does not guarantee a high level of productivity for the machinist because identifying errors after machining means

one is already too late to recover costs. When a machinist must rework a part because the CMM provides a negative result, the value of that part diminishes by half. Twice the expected time is going into it, as well as twice the material.

An alternative solution is an on-machine inspection with a machine tool probing system fitted to the CNC machine to set up parts and measure dimensions

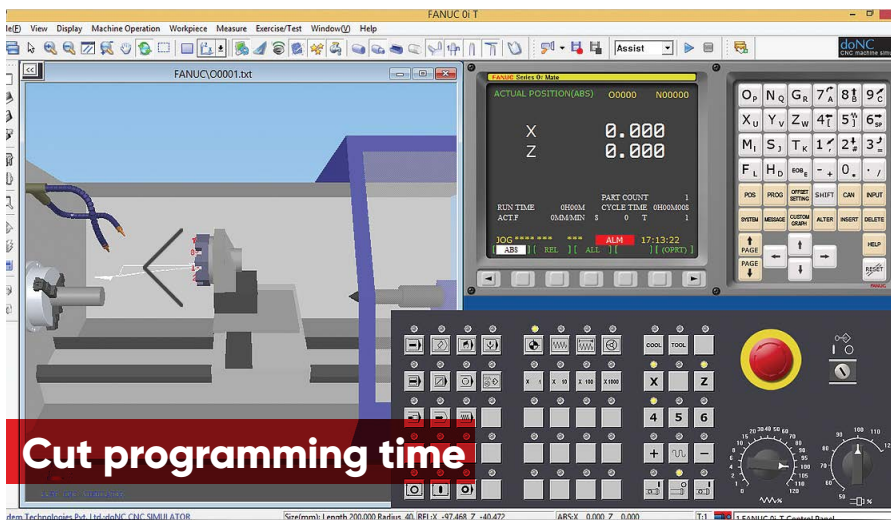
during and immediately after the machining process.

Improve efficiency

A machine tool probing system, mounted on the machine spindle or turret, provides numerous benefits to a shop. The system can be used to identify and set up workpieces – a process that can take 10 minutes manually, but only seconds with a probe – and can measure features during the machining cycle and immediately after, when workpieces are still on the worktable.

Increase mould accuracy

On-machine inspection is a particularly valuable asset in the production of moulds for injection moulding and other moulding processes as it can capture errors early, provide immediate feedback and automatic offset correction, reduce inspection backlog, ease CMM bottleneck and decrease CMM sampling rate, total inspection time and scrap while increasing productivity and machining accuracy.



Import CAD files

Use CAD to design and help program faster rather than doing the math on your own. Working with a variety of customer file types that may come your way is a huge time saver, especially when working with solid model files or wire-frame drawings. If you can open them, you can measure them, edit them and even convert them to g-code.

Employ post processors

Write a g-code for multiple types of machines, machine configurations and controllers, and easily switch between control types and machine configurations using a post processor. This step gives you the ability to wire g-code

for the machine you currently have and the one you will get in the future. Writing hundreds of lines of g-code in seconds, programming all kinds of two-axis, three-axis and beyond CNC movements is possible. So is cutting everything from basic hole cycles to complex hard milling on full-axis and multi-axis machines.

Simulate and report

Document your programming process with live feedback as you fine-tune your toolpath features. Prove out processes before the job material, equipment or tooling is available. Seeing what's going on before you get out to the machine can make

a huge difference. Thinking something through is one thing; seeing it in real-time is another. Before you set up a single work offset or optimize fixturing for a production run, don't you want to see what you planned out in your head? That includes, for example, the direction the tool is moving, length the tool is sticking out, clamp fixtures or work holding obstacles, the time it takes, amount of stock and clearance. Simulating and reporting helps you avoid costly mistakes and gain a greater understanding of job requirements. Ensure you simulate, verify and compare the tool paths with the 3D model before posting it for machining.

Save and load machining features

Create single operations per feature or customize multiple operations tied to a single feature. This flexible programming workflow eliminates redundant tasks. Reuse your tool path settings and establish standard processes. Each tool, material, set-up and machine must work together to achieve a delicate balance. For example, how aggressively you cut, the stock you leave for the finish and how quickly you move. Testing, experience and learning from the experience of others will help you capture best practices and continually apply them.

Use adaptive tool paths

Take advantage of what current technology has to offer modern cutting strategies on today's powerful and fast CNC machines. Cut deeper, run smoother and increase material removal rates. For example, adaptive tool paths are quickly becoming the standard for two-, three-, four- and five-axis roughing. Hence, with cutting edge technology one can reduce cycle times, extend tool life, and minimize wear and tear on your equipment.



Eliminate manual errors

Manual errors have a significant affect on die mould applications. For some relief from errors use:

- A standard checklist during the manufacturing process which will help implement features in AMS die mould machines to avoid manual errors.
- Manual errors normally happen during operator work setting and tool setting. Internal cross-checking procedure eliminates manual errors.
- Many times, a manual error happens even in programmed settings. Eg. The programmer generates a program for 8mm ball nose, but the operator has set it for 10mm ball nose due to which there will now be an over-cut in the mould. To avoid this issue, the operator must ensure tooling details in the program before running the operation.
- Wrong work coordinate selection also creates a manual error. The operator must ensure proper work coordinate in the program.
- Customers face a big issue when there is a power failure. During a finishing operation, if

- there is a power failure, it creates a pit mark on the moulds. This is unacceptable from the quality point of view. AMS machines have the solution to avoid dig mark on the die. If there is any power fail, the AMS machine will retract a minimum of 0.3mm automatically.
- Programmers should always consider a tool holder gouge in CAM software and post-process must be done after the verification of all tool paths.
- The mould designer has to ensure shrinkage of the component during core cavity splitting.
- He has to ensure wall thickness between the cooling hole and the component surface.
- AMS has CNC control software to transfer programs from PC to machine. It reduces human movement on the shopfloor and also increases CNC control life.

Leverage cutting-edge technology for productivity improvement

Normally, mould manufacturing takes a couple of days. In this condition, a customer should focus to improve productivity using the latest cutting

tool technology. High-feed milling cutter reduces mould manufacturing time during roughing and re-roughing operations.

A diameter of 50mm cutter with 0.5mm depth of cut with 4000mm/min feed rate can be run on AMG machine.

During roughing operation, compressed air should be used. It increases machinability and the cutting tool's life.

The mould designer has to reduce manufacturing time in mould making. Reducing component parting line width is one of the time-saving techniques used in the process. Mould non-metal match area can be relieved during mould design. Mould non-metal match area surfaces can be machined faster using more step over.

Quality improvement

Surface quality is very crucial in mould making. Hence, always use higher RPM with proper cutting feed with high-pressure coolant.

- Use constant step over with lower limit. This increase product surface finish (10mm ball nose, 0.08mm stepover) and (Tool diameter x 0.8% stepover).
- Use CAM program tolerance 0.01mm for finishing / 0.02 for semi finishing / 0.05 for roughing.
- Parallel plan machining / constant stepover machining/ scallop machining will improve the surface finish of the component.
- Consider high-speed cycle commands in programming during die mould machining (AICC / HPCC / SSS / G5.1 Q1 / Cycle 832 / G05 P20000).
- The retracting feature from AMS is also ideal to improve quality during power failure issues. Power failure can create a part that will surely be rejected because of the dig mark made on the component. Such nagging problems along with others can be fixed by a capable machine from AMS.

The Joy of Giving

**CSR
Activity**

AceMicromatic Group takes heed to the fact that it does not work in isolation. It believes that since it receives considerably from society in the form of resources, it must pay it back. Following are some of the Group's transformational practices aiming toward the upliftment of society...

CSR



Transforming Lives

Dec 2019 – Jan 2020

Education is a proven tool for empowering and changing lives of the weaker sections of the society. To help build an infrastructure that can provide conducive learning environment, Micromatic Machine Tools donated desks, benches and water filters to Zilla Parishad High School (Z.P.H.S.), Chinnakaparth, Chityal, Telangana, in December last year. Anthony Pinto, CFO, Micromatic Machine Tools, oversaw the initiation. The company strongly believes that contributions like these help in creating a school environment that supports children to learn and grow.

In January this year, the company yet again extended its support to the functioning of Puzhal Panchayat Union Middle School, Surapet, Chennai, by providing writing desks and benches.

Reaching Out

March 2020 – June 2020

The unprecedented challenges posed by Covid-19 had corporates come out to serve people in distress in all manners possible. To do its bit, AceMicromatic Group contributed to the heartening endeavor by partnering with Atria Foundation to deliver food to the ones most affected during the pandemic lockdown – the underprivileged and the migrant laborers. So far, over 2,00,000 food packets have been distributed.



From A Vantage Point

Expert
Opinion

With over four decades of unparalleled growth, Sridevi Tool Engineers has secured a position of a leading Plastic Injection Mould manufacturing company of India. Here's knowing the company Director Akshay Kalyanpur's views on the association with AMG, the current Die and Mould market scenario and indigenous manufacturing...

Incepted in 1972, Sridevi Tool Engineers Pvt Ltd started off with just a single milling machine. The company would mostly outsource back then. Now, with around 50 machines, it specializes in design, development and manufacturing of plastic injection moulds for Automotive White goods, Luggage and various other Engineering industries. It is one of the largest commercial tool rooms in India having more than 40 years of experience in producing tools for both domestic and foreign markets. It majorly produces moulds for Automotive Trims, Consoles, Pillars, Headlamp Housings, Air Filters, Exhaust Assemblies, Instrument Panels and its Child Parts, Grills, Motorcycle Fenders etc.

"Ninety nine percent projects that we undertake are for the Auto industry, comprising four- and two-

wheelers. We do a lot of tools for scooters and motorcycles. In four wheelers, majority is passenger vehicles and a small fraction of it is commercial vehicles," shares Akshay Kalyanpur, Director, Sridevi Tool Engineers Pvt Ltd.

Die and mould industry's current state

The new BS VI emission norms this year have led to a fresh demand for new tools. Hence, the Die and Mould industry in India right now is busy because of the compliance driven need of the government. "The automotive companies are still not able to manufacture or produce vehicles to their peak levels. However, players in plastic injection will not be affected much because in electric vehicles, the drive in the engines and the engine compon-

ents is usually removed. The ones who are in die casting might get affected because many moving parts from the engine bay get removed and replaced with the motor," Kalyanpur points out.

Expectations from machine tool builders

In Kalyanpur's opinion, automotive players are the biggest growth drivers for the Die and Mould industry. "The market has become extremely competitive. None of the vehicles launched stays at the top for more than six months. The only option left to boost the sales of vehicles is launching their facelift. When you launch a facelift, you again require more tooling. So, the number of vehicles that are to be sold are dwindling but Die and Mould people are not affected," he explains.





Source: Sridevi Tool Engineers Pvt Ltd

“Even if the Indian die and mould manufacturers have produced their tools on time, the customer’s project cannot kick off unless a few tools from China come down. This is the current major issue for the industry.”

Akshay Kalyanpur

Director
Sridevi Tool Engineers Pvt Ltd

Another driver, he points out, is the Packaging industry. “The FMCG consumer market is booming, hence a lot of tooling is required. Sub-micron accuracy levels are required when producing moulds for these two industries. If you have anything that’s going over 20 to 30 microns, there is a chance that the plastic will flow out and the desired shape of the part will not be achieved. So, any decent Die and Mould manufacturer would need an accurate machine from a machine tool builder with vibration dampeners and good surface finish capability and repeatability,” he adds.

Challenges faced

The only constraint in the Die and Mould industry, according to Kalyanpur, is the lack of sub suppliers. “If you were to compare with countries such as China, Taiwan, Korea etc., they have an excellent set of sub suppliers; an ecosystem that basically helps the core companies to do their core activities and

outsource other activities to their sub suppliers. This ensures that the capital is used for the core activities. Hence, they are able to achieve a higher turnover as compared to countries like ours where we do not have a very good subsystem or ecosystem for tooling,” he adds.

When asked if he has an appeal to make to the government in this regard, he says, “Small players who want to develop the ecosystem are unable to do so since the land is expensive. What we need is the government to provide an ecopark exclusively for tooling. Thus, the major hurdle of capital is covered by the government.”

Automation in Die and Mould industry

Customers today are aware of advanced manufacturing and are requesting sensors and 3D additive manufacturing in the moulds, he shares. “In a market as price sensitive as India, IoT and Industry 4.0 is an expensive transition and is slightly difficult in an existing organisation or machine because one may have many different machines and to get all of them synced is highly tedious. The application of Industry 4.0 is much simpler in Greenfield projects,” he adds.

“The key to being a good die and mould manufacturer is flexibility. The more one tends to go towards automation, the lesser are the chances of them being flexible since the work environment becomes extremely small. In our industry, there is still a lot of value addition by people. They are the most flexible resources and to replace people with automation is slightly difficult. The parts that we manufacture are not manufactured before. Everything that we manufacture is for the first time. You cannot standardize something you are manufacturing for the first time and, hence, cannot automate. It’s difficult to automate in this sector

since the product category is also continuously fluctuating,” explains Kalyanpur.

Covid 19 effects

In the face of the ongoing Covid 19, industries across the world have been affected. Explaining the pandemic’s repercussions on the Die and Mould industry and Sridevi, in particular, Kalyanpur says, “Most of the die and mould components are sourced from China. One of them is the hot runner system which is an irreplaceable part. We are facing delay in its delivery and unfortunately, there is no Indian substitute for that. We can make do temporary with Indian counterparts which is not a major concern but a hot runner is a major concern for the Die and Mould industry in India. From the project point of view, since the customer cannot give all the tools to a single tool maker, the customer always spreads his risk by giving it to various tool makers. Sometimes the customer also chooses to go and place orders for plastic injection moulds to China, Taiwan, Korea etc. Now, even if the Indian die and mould manufacturers have produced their tools that are on time, the customer’s project cannot kick off unless a few tools from China come down. This is the current major issue for the industry.”

Partnering for growth

Sridevi’s association with Ace Micromatic Group has been for more than a decade. However, it was in 2013 that the company procured its first machine from it.

“The build quality of AMG’s machines is very good as compared to their Indian counterparts,” he adds. He has an equally positive feedback on the service part too. “Service is key. We have never had any issue on the service part too. The finishing ability, accuracy, and repeatability of the machines exceed our expectations.” **CNC Plus**

Rebuilding the Old

Case Study

A compelling account of how Micromatic Machine Tools helped Coimbatore-based Sakthi Auto Component in reconditioning of its existing broken-down machine and saving the money that was to be spent on a new machine...



Sakthi Auto Component Ltd is a major supplier of critical components to passenger car manufacturers. The components include Steering knuckles, Brake drums, Brake discs, Hubs, Brake calipers, Carriers, Differential cases, Manifolds etc. Presently, its clients include Maruti Udyog Ltd, Hyundai, Ind Auto Ltd, Ford India, Honda Siel Cars India Ltd, and Tractors and Farm Equipment Ltd. Its Castings meant for trucks and refineries are exported to the US. The quantum of exports per month ranges between 250 MT to 500 MT and is likely to go up to 1000 MT in the near future.

The company had an old machine that had broken down and was lying idle at its shopfloor. After being suggested a reconditioning of this machine, it chose Micromatic Machine Tools (MMT) for the project.

Reconditioning as solution

Wear and tear due to age, accidents and breakdowns of machine tools is a common occurrence at a manufacturing unit like shop floor, affecting production and causing a huge dent in finances. Keeping its then current production volumes in mind, buying a new machine was a serious investment for Sakthi that evidently required a lot of recovery time.

Hence, Reconditioning was another option that was considered as it could take care of all these concerns at a lower price. It is generally described as the process of restoring a machine tool to its factory condition as per the scope. Its processes usually encompass thorough check, change of worn parts, cleaning, re-erection, recommissioning, recalibration, and if needed, repainting of the machine.

RECONDITIONING OF CNC MILLING MACHINE AMS MCV 320

XYZ Axis Reconditioning
Spindle and Drawbar Reconditioning
Tool-decamping Unit Changeover
Electrical Cabinet Re-routing
Machine Repainting

Depending on the requirements concluded on a detailed check on the condition of the machine, necessary repairs and replacements are done to bring the machine back to its production capacity.

What it encompasses

Reconditioning comprises dismantling of all units, cleaning, and identification of damaged parts for rebuilding or replacement.

XYZ axis reconditioning - Due to non-stop usage or accidents within the machine, the axes can stray from the accurate positions resulting in improper machining. They are checked and calibrated, and brought back to the right conditions.

Spindle reconditioning - Main spindle is checked after dismantling and repaired to the extent feasible to achieve the accuracies. Spindle repair includes grinding of solid spindle and hollow spindle (sleeves) and Nichrome/Chrome coating. If found beyond repairable limits, the spindle along with the sleeve completed with all parts is replaced by a new one.

Machine repainting - Due to accumulation of dirt or chip off, the old paint on the machine is removed. It is sanded off, primed and repainted as part of a 12-step repainting job to make it look like as good as new and last long.

Electrical cabinet rerouting - Sometimes electrical wiring within the CNC machine gets damaged due to shorting, accumulation of dirt or pests. The cabinet is cleaned and correctly wired to perform at optimum levels.

Challenge

Sakthi Auto Component, a valued customer of MMT, had a broken-down CNC milling machine AMS MCV 320. A new machine meant serious investment that required a lot of recovery time.

Solution

MMT offered the company reconditioning services for the machine. The performance of the machine post reconditioning has improved substantially. It looks as good as new and, with all the modifications, is certain to last long.

Towards customer satisfaction

Sakthi Auto Component, a valued customer of MMT, was offered reconditioning services for its broken-down CNC milling machine AMS MCV 320.

Major activities included XYZ axis reconditioning, Spindle and drawbar reconditioning, Tool decamping unit changeover, Electrical cabinet rerouting, and Machine repainting.

The company got the desired results and the performance of the reconditioned machine has improved substantially. Machine breakdown, which was a daily occurrence prior to reconditioning, has been totally eliminated. The team also faced frequent gripper arm bend issue and tool fallout issue, which has now been modified with Hydro

pneumatic declamping arrangement. The team is highly satisfied with this modification.

The rewiring of electrical cabinet has helped circuit traceability. The machine that earlier looked extremely worn-out, now looks like a new machine. Additionally, post reconditioning, component size variation has been reported nil. "Ever since spindle reconditioning and axis ball screw replacement, the machine is running very well. Overall, we are very much satisfied with the reconditioning of the machine and extremely happy with its performance," S Venkatesan, Sr Manager, Machine Shop Maintenance, Sakthi Auto Component Ltd.

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For Quality is a Habit

Company Profile

Promoted by Ace Designers, Ace Multi Axes Systems Ltd is an innovative company manufacturing critical precision components. Equipped with the highest quality machines, tooling, information systems and personnel, it is rooted deep in its ethics of delivering quality offerings.

Ace Multi Axes Systems Ltd (AMASL) has been manufacturing machined parts since 1996, both medium and large, from simple to complex, serving a wide range of industries - from mission-critical Aerospace to Healthcare, Automotive, Locomotive, Packaging, Machine Tools and Engineering across India and overseas.

Promoted by Ace Designers, the flagship company of the Ace Micromatic Group, AMASL is spread over five plants in Bangalore with 80,000 sq ft of floor space for manufacturing.

"Utilising a professional line-up of high calibre project engineers, senior managers, engineers and administrative staff, we work together as an effective team supported by sustained investments in skills, exper-

tise and plant to deliver the manufacturing solutions clients demand," says Gopal H Gaitonde, CEO, AMASL.

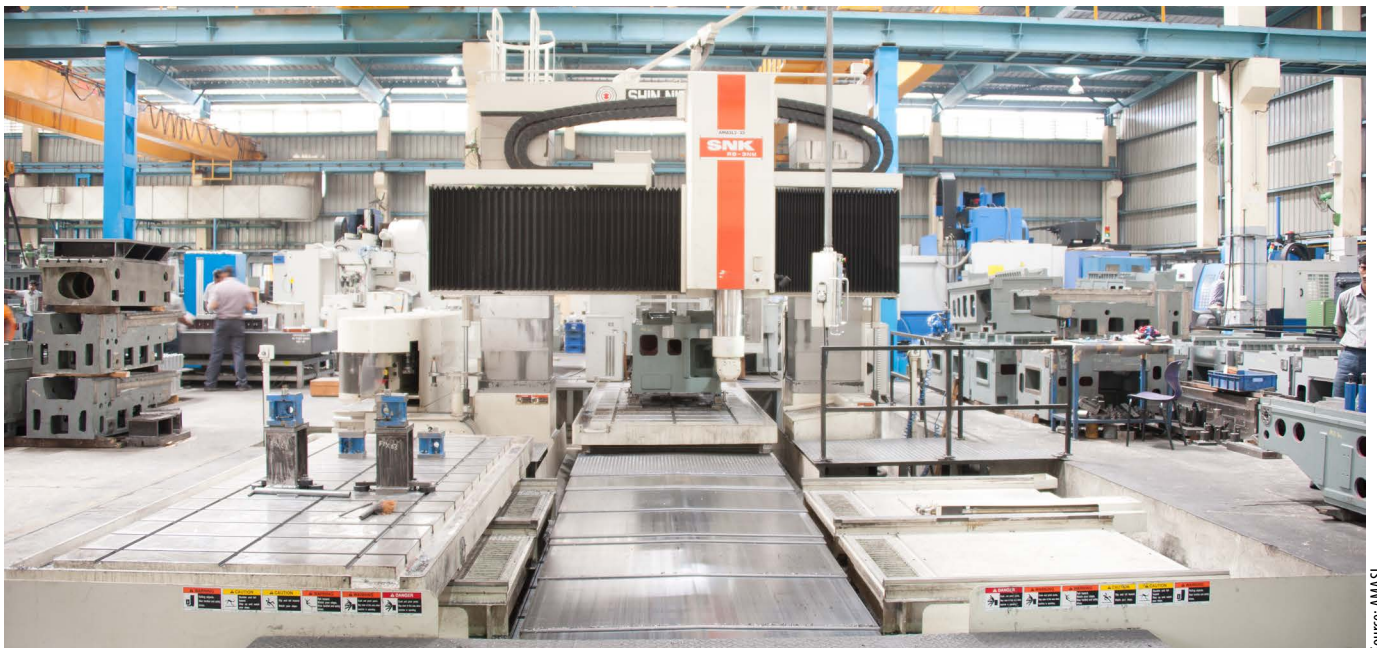
Serving myriad industries

In its 24 years, the company has grown its business exponentially, developing innovative products and disrupting industries. Following are the areas it has forayed into over the years.

Aerospace: AMASL manufactures parts for satellite launch vehicles, wings for helicopters, fixtures and tooling for aircrafts, and parts for surveillance systems. "Our ability to manufacture the highest quality precision solutions has earned us trusted partner status with the most recognised names in global aerospace," informs Gaitonde. The company is AS 9100 compliant and ISO 9001:2015 certified.

Healthcare: The company has earned the trust of global leaders in the extremely demanding medical equipment industry and is a chosen strategic supplier for casting, fabrication and machining commodities. With a wave of medical and technological innovation currently underway in India and overseas, AMASL is uniquely positioned to provide contract manufacturing services to this exponentially growing industry. Majority of the machined parts and assemblies are exported to plants in India, the US, China, France, Israel and Mexico.

Locomotive: The company manufactures and supplies precision-machined components for specialised locomotive braking systems and machined structural components for wagons.



Machine Tools: AMASL manufactures precision-machined parts for machine tools including turning centres, machining centres and wood working machines. Parts include beds, columns, saddles, top tables, slides, headstock housing etc.

Packaging: It manufactures castings, fabrication and machined parts to the packaging industry for high-speed strapping machines, plastic strapping machines and carton box packing machines. The parts manufactured is exported to the global packaging equipment manufacturers.

General Engineering: AMASL manufactures a wide range of medium and large precision components for Energy, Oil & Gas, Power generation and automation customers. These parts are supplied to the Indian plants of global companies.

State-of-the-art facilities

AMASL has five manufacturing facilities of which one is exclusively dedicated for assembly. All facilities are ISO 9001:2015 and AS 9100, and are Revision D certified. The latest manufacturing facility was set up in 2018 including expansion on the foundry.

"We are able to offer a comprehensive solution to all machining and casting requirements and have a sustained programme of investment into the latest machine tool technology. This ensures we always have the best tools available to meet the demanding requirements of our customers," stresses Gaitonde.

Most of the company's 50 plus CNC machine tools is from major machine tool manufacturers, respected around the world for their accuracy and robustness, whilst all of its CNCs utilise Fanuc and Siemens controls. "This standardisation allows for flexibility and familiarity across the workforce and simplifies training requirements. Multiple examples of most types of machines provide



Source: AMASL

"Utilising a professional line-up of high calibre project engineers, senior managers, engineers and administrative staff, we work together as an effective team supported by sustained investments in skills, expertise and plant to deliver the manufacturing solutions clients demand."

Gopal H Gaitonde
CEO
AMASL

robust contingency in the event of machine breakdown and simplifies factory loading," he explains. AMASL's contract manufacturing plant (Unit 3) was set up in 2011 mainly to assemble CNC turning centres for its parent company Ace Designers. "We currently have an installed capacity to assemble 1,500 machines per annum. Apart from machine assembly, we also assemble high-level assemblies for Healthcare, Aerospace and Machine Tools industries," he adds. This unit currently employs over 50 people who are technically trained to assemble simple mechanical to complex electro-mechanical assemblies.

Foundry for environment

AMASL's cutting-edge foundry was established in 2013 with a vision to produce high-quality, cost-effective Aluminium castings while ensuring a sustainable environment. "Our plant is equipped with the state-of-the-art equipment and



Source: AMASL

"We received a solid support from the Government of Karnataka to continue our operations and be available for our customers during the lockdown. Likewise, our employees, raw material and post-machining process suppliers relentlessly stood by us."

Prashanth Ramesh
Director
AMASL

we currently produce low-pressure die castings, gravity die castings and large-sized Aluminium sand castings," Gaitonde informs.

"We currently supply casting and machined components to Healthcare, Machine Tools, Aerospace and Packaging industries. To maintain quality, we also have an advanced testing laboratory. We also do the simulation on magma simulation platform to ensure we get the casting right the first time," he adds.

However, the highlight of the foundry is that foremost importance has been given to ensure safety and sustainability of the environment. Extreme care has been exercised to ensure safety with systems like flame detectors and physical barriers to name a few. Hazardous waste is collected and disposed as per environmental norms.

With sufficient available capacity the foundry is capable of manufacturing medium to large castings from 1kg up to 300kg.



Components manufactured by AMASL for the Healthcare sector

Source: AMASL

Meticulous quality control

To support the wide range of components machined, the company has invested into world-class Coordinate Measuring Machines (CMMs) including a Gantry type CMM and can currently measure components of size up to 2,500mm x 10,000mm x 1,800mm. "We also have a wide range of height gauges, surface roughness, ultrasonic thickness measuring, full range of gauges, templates and manual measuring instruments. Most of our equipment is from the leaders in quality measurement systems including Zieiss, Brown & Sharpe and Hexagon Metrology," shares Gaitonde.

Lockdown diaries

Prashanth Ramesh, Director, AMASL, takes us through the Covid-19 pandemic lockdown phase when the company was operational. "We supply to the Healthcare and AS&D sectors that come under the essential commodities as per the guidelines of MHA. We supply parts for X-ray, CT Scanners and Ventilators, which are highly crucial in

the treatment for Covid-19, and hence, during the lockdown, we went above and beyond to support our customers during the crisis," he shares.

The company supplied parts and assemblies as per the customer schedule. It made components mainly for defence and healthcare companies including GE and Philips Healthcare, HAL, and Godrej Aerospace. "We also supported BEL with machined parts for the ventilators ordered by the Government of India under the PM Cares Fund," he further adds.

On whether the team faced any major challenges during the lockdown, Ramesh says, "We received a solid support from the Government of Karnataka to continue our operations and be available for our customers during the lockdown. Likewise, our employees, raw material and post-machining process suppliers relentlessly stood by us. Without this kind of support, we wouldn't have been able to meet the deadlines."

The only challenge, he says, were working in restricted conditions due

to the pandemic. "Our approach had to incorporate new social distancing rules, screening and additional sanitation efforts to an already set manufacturing system. Plus, there was the concern about worker safety. But we were able to manage it all successfully."

Now that the lockdown has been lifted, the market has started gradually picking up and the order inflow has been increasing from the company's current customers. "We are also receiving inquiries from potential customers, which is a great news. However, we are still cautious about the future and hope that things get better," adds Ramesh.

Lessons learnt

This was the first time the team witnessed a pandemic that led to multiple lockdowns across states and countries. "We initially struggled to get raw materials from other states and ship parts to our customers. The cost of logistics increased to an all-time high due to reduced manpower at our suppliers, ports, customers etc. and also because of working with a limited capacity in-house due to the restrictions of 30 percent employee strength during the first phase of lockdown. All these challenges made us change our way of working. We became more flexible with our operations and yet continued to deliver to our customers on time, maintaining high-quality levels," Ramesh shares. Every crisis teaches us lessons if we are ready to learn. The few the team has gathered in the pandemic crisis are: Teamwork is the key to success; Staying connected with all stakeholders is paramount; Agile supply chain and flexible manufacturing environment is a must; and last but not least, People are an important asset. Being there for each other during difficult times and ensuring that safety precautions are taken care of is what helps survive the crisis. **CNCPlus**

Sales and Services

INDIA

NORTH

Delhi

T: +91 11 49849380
E: mmtdel@acemicromatic.com

Gurgaon

T: +91 124 4745500
E: mmtgur@acemicromatic.com

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E: mmttrksales@acemicromatic.com

Faridabad

T: +91 129 4047000
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Rudrapur

T: +91 97201 06532
E: mmtukd@acemicromatic.com

Chandigarh

T: +91 99141 91057
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EAST

Jamshedpur

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E: mmtjam@acemicromatic.com

Kolkata

T: +91 98301 10933
E: mmtcal@acemicromatic.com

WEST

Ahmedabad

T: +91 99242 89892
E: mmtahm@acemicromatic.com

Aurangabad

T: +91 240 2552309
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Indore

T: +91 73899 39190
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T: +91 22 26861976
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Pune - Chakan

T: +91 98906 23205
E: mmtpune@acemicromatic.com

Pune - Chinchwad

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

Kolhapur

T: +91 98906 23202
E: mmtkop@acemicromatic.com

Mumbai

T: +91 22 26867271
E: mmtbom@acemicromatic.com

Mumbai - Thane

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

Rajkot

T: +91 28272 87003
E: mmtraj@acemicromatic.com

Shirwal

T: +91 98906 23389
E: mmtswlsales@acemicromatic.com

SOUTH

Bangalore - Peenya

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 26178001 / 03
E: mmtche@acemicromatic.com

Chennai - Sriperumbudur

T: +91 44 26178001 / 03
E: mmtche@acemicromatic.com

Chennai - Tambaram

T: +91 98407 85523
E: mmttbm@acemicromatic.com

Coimbatore

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

Hyderabad

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

Ranipet

T: +91 98407 85521
E: mmtprt@acemicromatic.com

Trichy

T: +91 98432 65434
E: mmttry@acemicromatic.com

INTERNATIONAL

Germany

T: +49 15774543744
E: vinayb@acemicromatic.com

China (Shanghai)

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



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Micromatic Machine Tools Pvt Ltd

#240/241, 11th Main, 3rd Phase

Peenya Industrial Area

Bangalore - 560 058

 +91 80 40200555

 connect@acemicromatic.com

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