TAGMA TIMES

NEWSLETTER

(Technical Info. on Die, Moulds & Toolroom)

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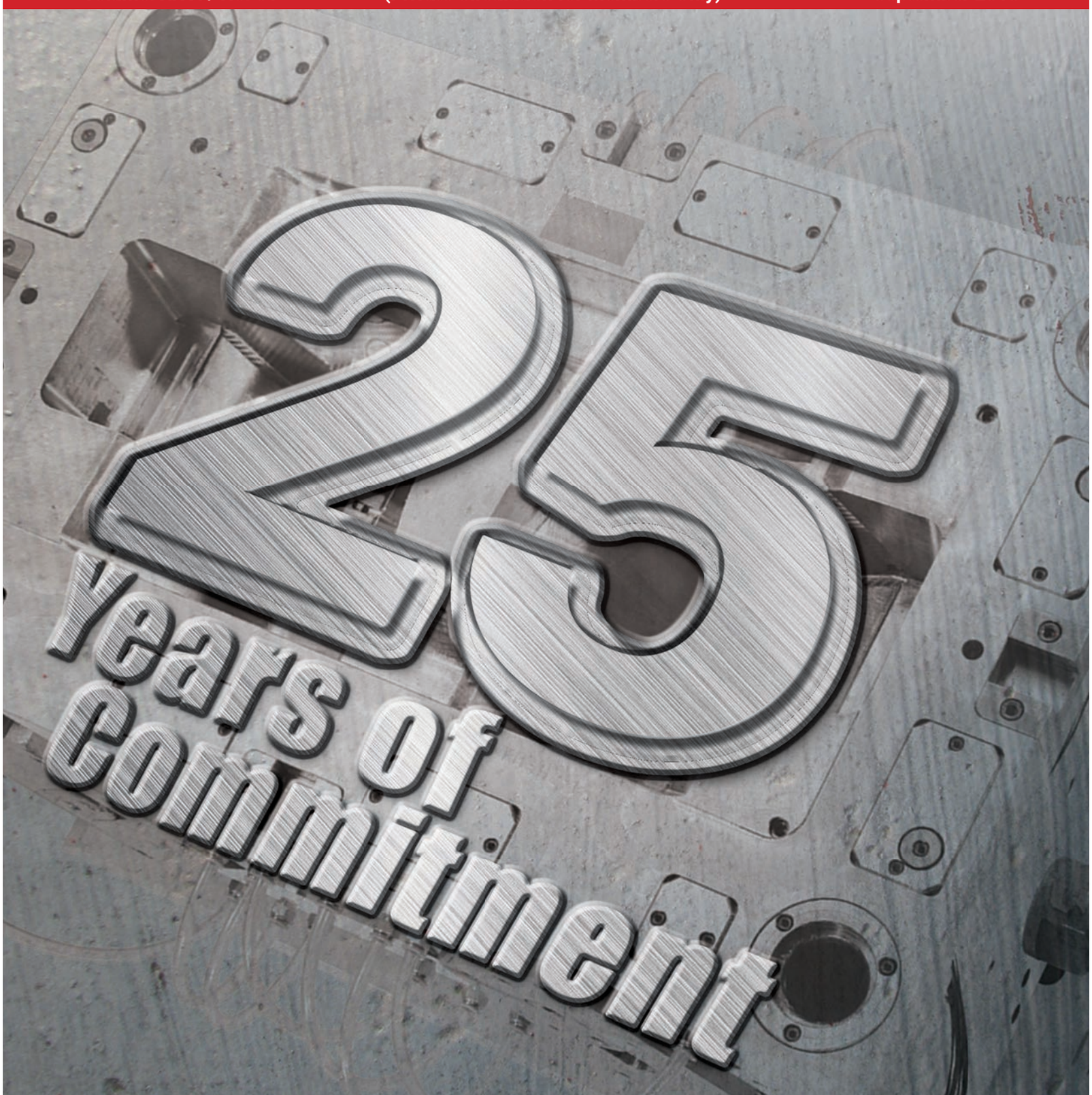

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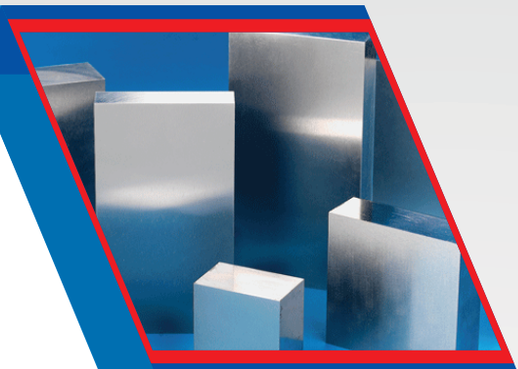

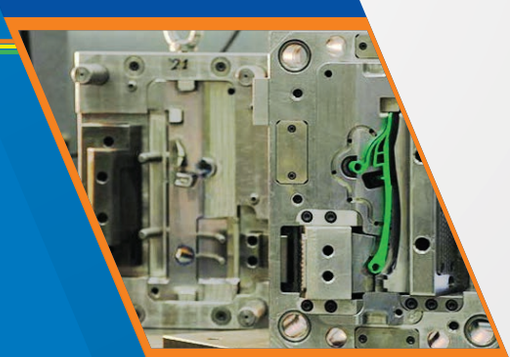

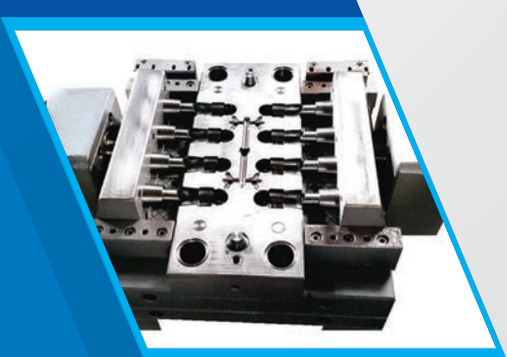

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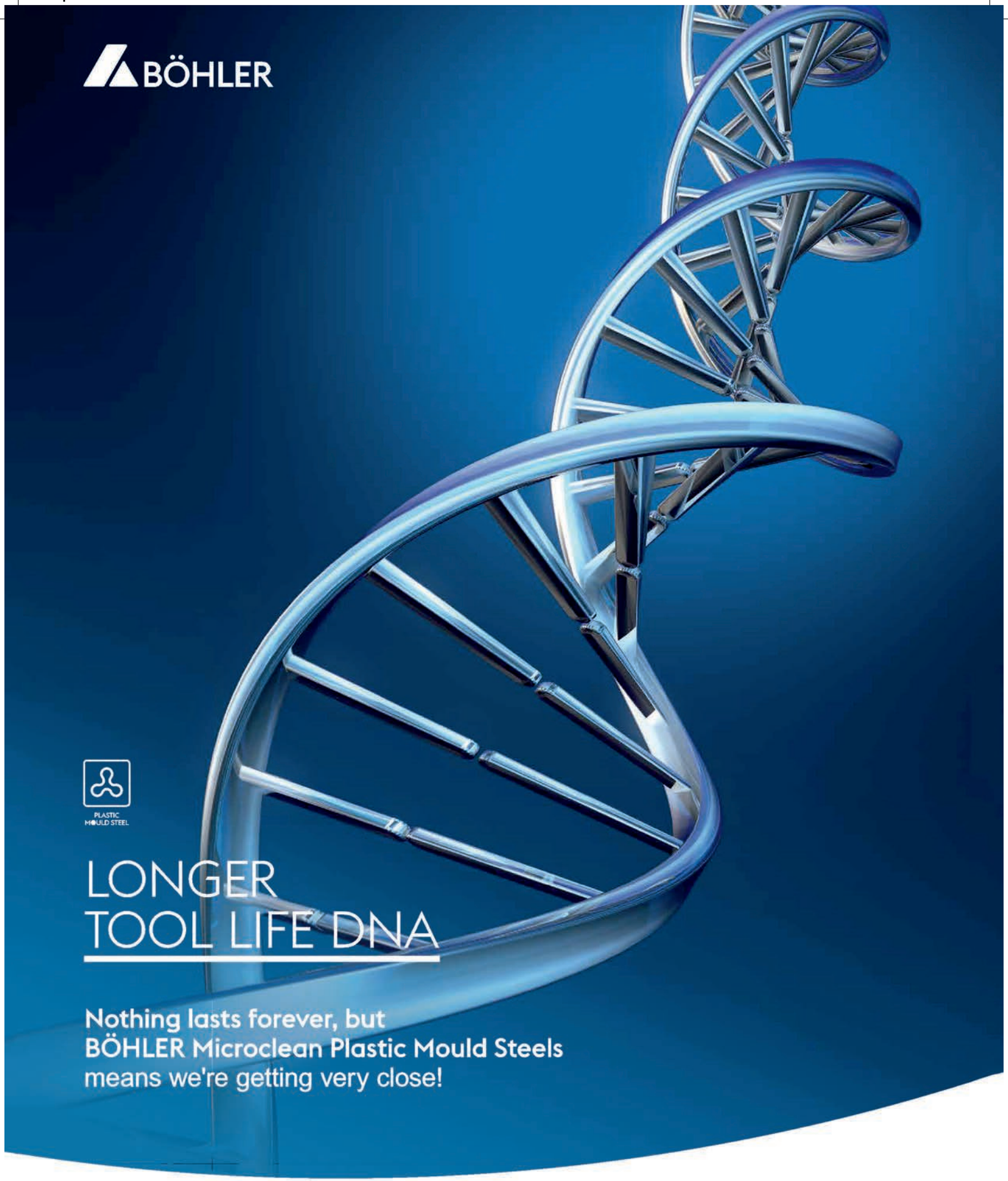

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PRESIDENT'S MESSAGE

Let's Grow Together!

The renowned American author – Edward Everett Hale – has rightly said, *"Coming together is a beginning; keeping together is progress; working together is success."*

I believe we, the Indian die mould industry, must work together to enhance competitiveness, become the masters in our field, compete with global giants and fulfil the growing domestic demands.

But let's be honest, we cannot do all the above from the very beginning. We must realise our true potential, focus on that and leave the rest to the other experts in their respective areas. Companies should aim to work together under one umbrella to enhance their capacity and services. We cannot depend on customers to hand hold us to improve our performance; we need to invest our time and resources to keep ourselves abreast with the latest technological advancements and tools, to become competitive.

Yes, we do have challenges in India. As a nation, we face several challenges like skill development, infrastructure, slow technology adoption and high taxes, among others. But I would also like to highlight some of the positive aspects like growing economy, increasing domestic demand, localisation within automotive industry and new entrepreneur joining the industry.

I must say, if we start working as a team and help each other grow, nothing can stop us in becoming a Die-Mould Power-house. I would even go on to say, that we must not only restrict our aim to just reduce the imports, but also to become so good that OEMs from developed nations also import tools from us.

One of the best examples of Team Work is TAGMA. Twenty-eight years ago, eight individuals came together to form TAGMA, providing a voice to the industry. Today, the association is been well recognised across the globe.

As TAGMA TIMES turns 25 this month, I thank all the founder members who took up the challenge. You showed us the path and helped us come together.

Let's come together to grow together.

Mr. D. K. Sharma
President

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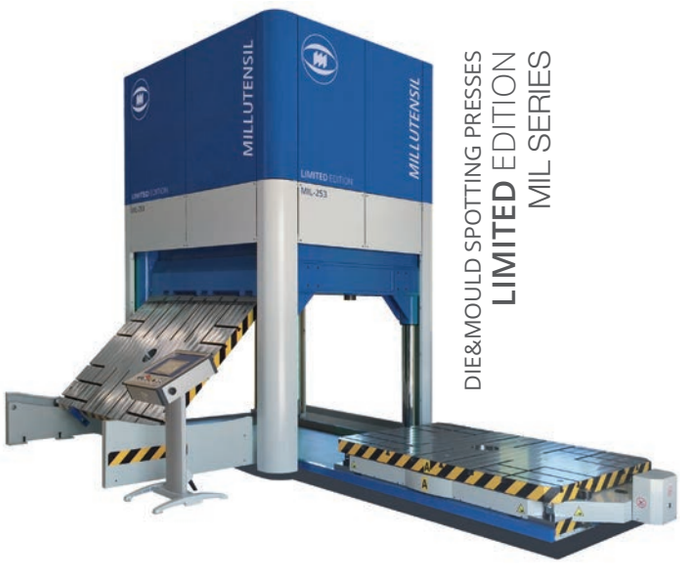

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EDITORIAL

Initiation Matters!

'A journey of thousand miles starts with a single step', originated from a famous Chinese proverb, this saying stands true to almost everything. However, that single step needs encouragement, passion and courage. Courage to initiate a journey, courage to represent, courage to become the voice of like-minded people and the courage to challenge the system.

Let's acknowledge such courage shown by the founders of TAGMA when the Indian tooling suppliers were struggling for existence. It was around late 1980s, when several technologies were not available in the country, imports duties on material and machine tools were very high and awareness about the die mould industry, in India, was very limited. There was lack of government support and the industry & the tool rooms were finding it difficult to deliver products on time or upgrade their technology and infrastructure.

Looking at the challenges faced by the industry, eight industry enthusiasts—Mr. Anil C Kilachand, Mr. A R A Shaikh, Mr. J N Godrej, Mr. P N Rao, Mr. N Reguraj, Mr. S C Kalyanpur , Mr. S Samu and Mr. Vijay N Kulkarni came together to form an industry association. Today, the association and its publication, TAGMA Times is the voice of the die and mould industry of India.

As TAGMA Times turns 25 this month, we feature some of the founders and put forth the challenges they faced, idea behind TAGMA and the industry's evolution.

The power packed edition also features industry leaders who share insightful details about the latest trends & technologies, the demand and the business outlook. This edition also covers experts talking about the need and importance of skill development.

Like every month, we have tried our best to put together a comprehensive issue. However, in our endeavor to serve you better and highlight the right topics and issues we need your involvement in terms of suggestions and criticism ☺.

With this, I leave you with this exciting edition. We look forward to your feedback, do not forget to write to us.

Best Wishes,

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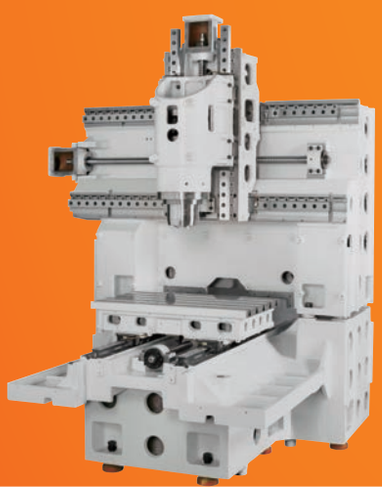

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Founding Leaders

Inception Matters

S C Kalyanpur

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As we celebrate the 25th anniversary of TAGMA Times, official newsletter of TAGMA its time to remember the visionaries who had vision to put India's die mould industry in global map, to become voice for the industry it's time to remember our Founder members Mr. Anil. C. Kilachand, Mr. P. N. Rao, Mr. S. Samu, Mr. J. N. Godrej, Mr. N. Reguraj, Mr. Vijay N. Kulkarni, Mr. S. C. Kalyanpur, Mr. A. R. A Shaikh.

It was during 1980 when the industry was struggling to survive, import duties on materials were very high, and die mould business was becoming very tough in India when the above mention industry leaders came together and formed an association to become voice for the industry and put the expectations and requirements in front of the government. The association, TAGMA, has come a long way to become India's largest die mould association with over 600 active members.

As many founder members believe, it was very challenging in the start to convince companies to join the association and expand the activities of TAGMA. However, with sheer dedication of founders it gradually started getting attention from the companies and later in 1994 TAGMA also become part of Federation of Asian Die Mould Association and started exploring overseas activities.

In this edition we have covered few of the founding leaders. Read on to know the idea behind TAGMA, as some founder member take you through the journey of TAGMA:

"Rise in competition will lead us to work hard"

"Forming TAGMA was the need of the hour, companies were struggling to survive and needed a voice to chart out their expectations. I am very happy that it has become the largest association in India for the tool room industry and supporting companies in terms of exhibitions, seminars, skill development and engaging with government in policy making," says S C Kalyanpur, Managing Director, Sridevi Tool Engineers Pvt. Ltd. in conversation with Amol Padhye. Read on to know the story behind formation of TAGMA.

Q Please share with us the story behind the formation of TAGMA…

During the late 80s, tool rooms in India was facing several challenges and did not have a voice to put their word forward. As an individual, one cannot do much and that is why coming together became a necessity. The government policies were not in favour of the die mould makers or I would say for any SMEs operating in the manufacturing domain. This led us to form an association to get the Indian tools rooms together.

Our aim was to highlight our requirements and the challenges faced before the Government. Die mould industry being the backbone of manufacturing, wanted the government's attention in terms of policy, subsidy and finance. We were struggling to match the global standards in terms of quality and delivery because some of the key components and mould steel were not manufactured in India, also the import duties were very high. We were very dependent on external factors to deliver quality tools and it was hampering our business.

This led us to come together and form TAGMA.

Q From the humble beginning 28 years ago to becoming India's largest association for tool room, how do you feel?

I, and am sure all the other founding members are happy with the way TAGMA has progressed. Forming TAGMA was the need of the hour, companies were struggling to survive and needed a voice to chart out their expectations. I am very happy that it has

become the largest association in India for the tool room industry and supporting companies in terms of exhibitions, seminars, skill development and engaging with government in policy making.

Q What were the challenges you faced in the beginning?

It was difficult to bring everyone together. However, with time and dedication we grew, the industry started seeing the benefit and joined hands. Also, we did not have any financial backing for office space and to hire a team. Initially, I accommodated the same in my facility (Sridevi Tool Engineers Pvt. Ltd.). We also provided financial support to run the office.

Going ahead, we started TAGMA Times in 1993 with a motive to inform the industry about the latest developments and technologies. It also became a platform for tool rooms to promote their capabilities.

Also, as tool rooms were not considered a lucrative business/ career option, there was less knowledge even among the tool makers. Skill development and education were also some of the challenges we faced.

Q Can you share any interesting instance about the early days of TAGMA with our readers?

It is not exactly an instance, but I would still like to share it with the readers. As I mentioned, the initial years were very challenging, and to bring the fraternity together we decided to organise an event. We met and came up with a timeline which was 4-5 months from the exhibition date. We had no experience in organising an event and had limited finance.

Mr JN Godrej, Managing Director and Chairman of Godrej & Boyce (also one of the founders of TAGMA) came forward to help us in terms of finance. The first event was successful, providing us good returns and a platform to the companies to showcase their products. We were being noticed and eventually industry aficionados came forward to become TAGMA members.

It was just the beginning, we started getting noticed by international associations. Federation of Asian Die Mould Association (FADMA) invited us to become a member. We joined them and started exploring the benefits. We learnt a lot from FADMA.

> Though we are in a much better position, finance and availability of skilled manpower continue to remain sort of a challenge. Because of the less margin, growth is very slow in the tooling industry and it remains the same.

Q You have been a part of this industry for more than three decades. How has the industry evolved over the years?

It was very difficult to run a tool room three decades ago because of the above mentioned challenges. However, I feel, the fast-growing economy has led to tremendous growth of the Indian manufacturing industry reflecting positively on the die mould industry. I see a rise in the number of people taking interest in the tooling industry, running the business has also become easier today.

Q Challenges that the industry is facing at present…

Though we are in a much better position, finance and availability of skilled manpower continue to remain sort of a challenge. Because of the less margin, growth is very slow in the tooling industry and it remains the same. Rise in the number of homegrown tool rooms and global players setting shop in India has led to tough competition.

However, I would like to add that rise in competition will lead us to work hard in order to stay in competition leading to higher productivity and efficiency.

Q How do you see the future of Indian tooling industry?

Every industry in India is growing at the moment, thanks to the young population and their increasing purchasing power to spend. The tooling requirement will further grow, and the future is very bright for the Indian tool makers. If we manage to reduce the imports of equipment and steels, I am sure we will be in a better position to compete with countries like China, Taiwan and South Korea.

Q Any message for the young generation…

In the last few years I have noticed, not many young men/women are willing to become a part of the tooling industry looking at the challenges. Every product, every mould comes with a different set of challenges making the mould makers job challenging as well as interesting. Today, thanks to automation several tedious tasks have been reduced or eliminated making it much different compared to how it was earlier.

So, if you want to experience real mechanical work and like challenges, die mould industry is the place you would want to be.

"In the last 28 years the Industry has grown by leaps and bounds"

"TAGMA has reached new heights in the last three decades and it is a matter of pride for all of us. We can say TAGMA is truly a National Association representing the industry today," says Anil C. Kilachand, Chairman, Stiack Engineering Pvt. Ltd and one of the founding member of TAGMA as he shares his experience of forming TAGMA India.

Q Please share the story behind forming TAGMA with our readers. What was idea behind forming the association and how did the founding members come together?

I would say all credit goes to Jamshyd Godrej, Managing Director and Chairman of Godrej & Boyce, and Dr. S.N. Patil, the then Director General of DGTD (Directorate General of Technical Development). They realised there was no professional body representing the Tooling Industry of India. As a result, we were unable to present to the Government of India and the nation the problems that the industry was facing.

From the initial meetings to the foundation and formation of TAGMA, it all happened at the Godrej and Boyce Manufacturing Co. Ltd. under the chairmanship of Mr Godrej. It can also be said that Godrej and Boyce were the first patron member of TAGMA. During the first meeting, the newly formed Executive Committee of TAGMA elected N. Reguraj as the first President of the association.

Q From a humble beginning to becoming India's largest association for tool room and the voice of Indian tooling suppliers, how do you feel?

The industry body has reached new heights in the last three decades and it is a matter of pride for all of us. We can say TAGMA is truly a National Association representing the industry today. As a part of its' efforts Mould and Die making is now recognised as a distinct industry segment. It may also be highlighted that TAGMA was invited to join FADMA in 1994.

Q What were the challenges faced during the initial years?

The major challenges that were faced in the formative years were the availability for import under OGL (Open General License) of special tool steels, specific machine tools and standard mould and die components.

The challenges were put forth by TAGMA to the Government of India. It led to the permission to import under OGL by actual users, instead of the long laborious procedure of applying for an import license which was often rejected.

Q Can you share any interesting instance/story with our readers from the early days of TAGMA?

One of the most interesting stories is the battle with ASPA over the import tool steel. At a meeting in the offices of DGTD between TAGMA and ASPA, one of the Executive Committee Members produced a piece of mirror polished piece of steel and placed it on the table. He challenged ASPA to provide steel that could produce the same result.

Q You have been a part of this industry for more than three decades, how has the industry evolved over these years?

In the last 28 years the Industry has grown by leaps and bounds. The growth in automotive and white goods industries has led to a vibrant tooling industry. Tooling industry is considered as mother industry and still needs serious attention from Government.

Q How do you see the future of Indian tooling industry?

Based on what I have said earlier, this industry holds boundless scope for employment and has a great future ahead.

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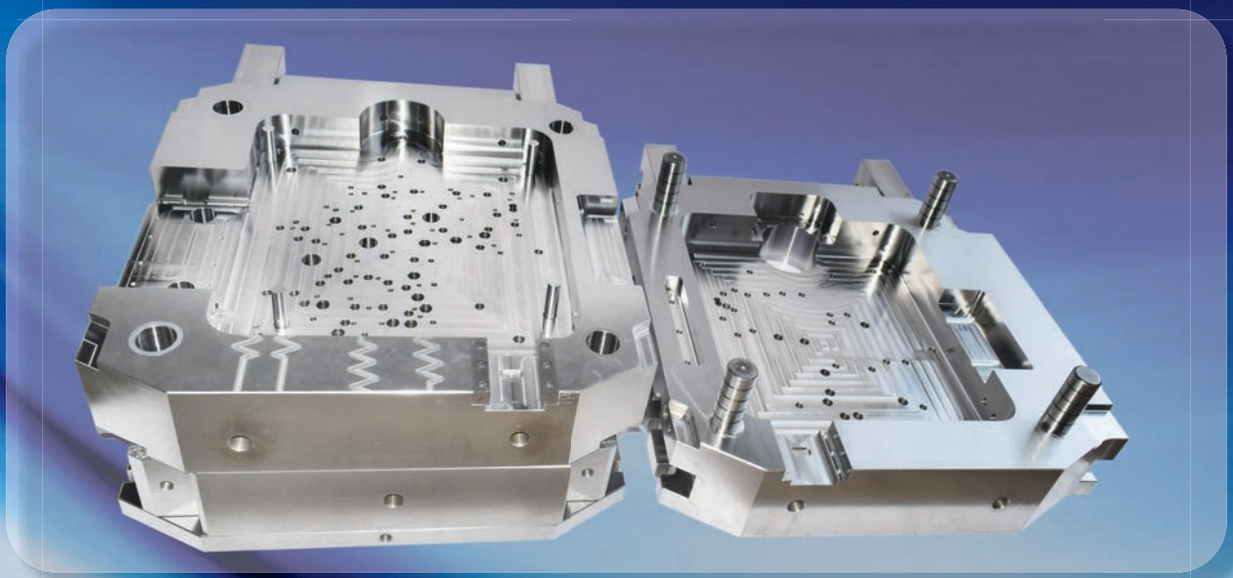

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"TAGMA is well recognised in India as well as abroad"

"The idea was to build a strong association to represent the Indian tool makers before the government and overseas markets," says P N Rao, Director & CEO, Empire Machine Tools as he recalls his early days during the foundation of TAGMA.

Q Please take us through the story behind the formation of TAGMA…

Initially we had members from various fields such as manufacturing, tooling, machine tools, etc. For example, Mr. Kalyanpur from manufacturing, Mr. Anil Kilachand from tooling side, Mr. Samu from material and myself from machine tools.

We all contributed in terms of knowledge and experience with various tool manufacturers and accordingly promoted the idea of TAGMA before the tool and gauge manufacturers of India. The idea was to build a strong association to represent the Indian tool makers before the government and overseas markets. We used to meet at restaurant Green House in Vile Parle or at Sridevi Tools office located at Saki Naka, Mumbai to discuss matters related to association, the tooling industry and our future plans. We also conducted few seminars with the help of various experts like Deckel to propagate the knowledge of good tool manufacturing. There were hardly 7 to 8 people when we started the association, thanks to Mr. Kalyanpur's consistent efforts we were successful to attract more members. I must say he is a great team organiser.

Q What were the challenges you faced during those days?

The biggest challenge was the availability of material and high custom duty on machine tools. It was very difficult for tool makers to deliver products on time and reduce the operation cost. We put across these concerns before the government and received some concession on duty of machine tools. However, there were not many changes in terms of material.

Q Apart from the founder members, who played important roles in the formation and operation of TAGMA?

The key people who played the most important roles were Mr. Kalyanpur and Mr. Kilachand, they were supported by Mr. Bhaskar Kanchan and Mr. Dion Fernandes.

Q Are you happy with how the TAGMA has progressed?

TAGMA has evolved over the years to become a truly professional organization. Today, it is well recognized in India as well as abroad.

Q How do you see the future of Indian tooling industry?

The future of Indian tooling industry is excellent and there are several reasons for the same. The cost of import is high, the current government is pushing for 'Make in India' and inviting several global companies to set-up base in the country. Also, all the customer industries are growing, it is a good sign for tool manufacturers. Quality of tools have also improved, thereby replacing imported tools.

Q Your message to the young generation who want to work in the tooling industry…

Keep your minds open to the latest technology. Forego traditional methods.

"In modern manufacturing era, China and India should strengthen the exchanges"

"In the recent years, India's economic growth has accelerated, and manufacturing industry has been more valued and developing rapidly. It provides market space and good opportunities for the development of India's tooling industry," says Wu Bingshu, Chairman, FADMA as he shares major activities of FADMA, trends in Asian tooling industry, Chinese policies to propel the industry and his views on the Indian tooling industry.

Q Please take us through the primary activities of FADMA. How does it plan to elevate the Asian die mould industry?

The main activity of FADMA is the annual meetings (AGM), which is held in FADMA member countries and/ or its regions by turns, to discuss FADMA matters regarding the amendments of FADMA Constitution, the admission of new members, and next year's work plan, etc.; the discussion of the development of tooling industry in FADMA member countries and/ or its regions in last year, and the progress of personnel training projects, etc.; to visit tooling companies and exhibitions in the meeting host countries and/ or its regions. 2018 FADMA AGM was held in Mumbai, India. The meeting discussed and approved the amendments of the constitution, accepted Hong Kong Mould & Die Council as a new member, and decided to hold the 2019 FADMA AGM in Philippines. Before the meeting, FADMA awarded the former Chairman of FADMA Mr. N. Reguraj an honorary medal. All the delegates visited the company of the Chairman of TAGMA, Mr. DK Sharma, and participated in the main activities of 2018 Die & Mould India International Exhibition, which enabled FADMA delegates to know more about the India's tooling industry and established the foundation for mutual trust and cooperation.

The FADMA OBM was held annually in China since China Die & Mould Industry Association CDMIA taking over the chairmanship of FADMA in 2014. The delegates discussed the resolution of FADMA AGM, visited Die & Mould China (DMC) Exhibition, and carried out exchanges between the tooling companies of FADMA members in China and Chinese tooling companies to help create a better environment for the operation of these tooling enterprises in China.

FADMA has established an exchange mechanism

regarding economic information and association publications and reached agreement to mutual support for the exhibitions. The Asian tooling industry will be enhanced by exchanging information and looking for cooperation opportunities through the platform of FADMA.

Q Do you have any strategy in place to promote standardization within member countries and/ or its regions and enhance the technological competencies of constituent member companies of the countries that are part of associations?

These years, former President of JaDMA, Mr Makino has suggested formulating the standard of tooling terminology, CDMIA and FADMA jointly held the Asian Tooling Industry Development Forum during FADMA AGM in 2014. In 2015, CDMIA and TDIA jointly held the Tooling Development Seminar. But the complete strategy to promote standardisation and enhance the technological competencies of constituent member companies has not yet been drafted.

Q It is said that this decade belongs to the Asian manufacturing industry. What are your views on the same?

Indeed, the manufacturing industries including automotive, electronics and IT, and household appliances in Asian countries (mainly Japan, China, Korea, India and Thailand) have developed rapidly since 2010. The above-mentioned products produced in Asian countries account more than 60% of the same kind of products in the world. The main reason is that these Asian countries have established relatively complete industrial chain and global supply chain, and a complete tooling industrial system. 80% of the parts of the above-mentioned products are manufactured by dies and moulds. I believe there will be no significant change till 2020.

Q How is the Asian die mould industry doing? What important role can it play in the growth of the Asian manufacturing sector?

As I know, the Asian tooling industry produces about 55% of the world's dies and moulds. It not only meets the demand of the Asian manufacturing industry, but also accounts for 60% of exports of the world's dies and moulds. The complete tooling manufacturing industrial chain was established, especially in Japan, China, Korea, Chinese Hong Kong, Chinese Taiwan, India and other countries and/ or its regions. The complete industrial chain and strong tooling manufacturing capability are the basic technical guarantee for the growth of Asian manufacturing industry.

Q Die mould industry is the back bone of manufacturing sector. What kind of attention does it needs from the government? Also, can you share an example of any country and/ or its regions that has some of the best industry friendly policies for their domestic mould makers?

The tooling industry is the basic equipment manufacturing industry. Its development needs the concern and support from the government. The government should give priority to the development of tooling industry when they formulate industrial policies, give preferential tax to tooling enterprises (mainly SMEs) and provide financial support, and the education and training of human resources to enhance the technical and skill level of tooling industry employees.

The governments of developed countries (regions) in tooling manufacturing, such as Japan, Korea, Singapore, China, have given special support to tooling industry according to the different development stages. As I am more familiar with China, I would like to outline the support policies from the Chinese government (central government and local governments) for the development of the tooling industry. The support policies from the central government mainly include formulating and promulgating 'The Development Plan of Tooling Industry', formulating preferential tax policies for tooling industry (including domestic tax and tariff reduction of imported technology and equipment), and setting up special projects for tooling technology R&D and technical transformation, etc. The support policies from local governments especially in tooling cluster zones mainly include providing relatively low-cost lands, supporting and awarding technology innovation (standards and patents, etc.), local tax reduction, personnel training, financial support, and the establishment of public service

Q Are there any initiatives taken by FADMA member countries to reduce the duty/taxes to foster the trade between member countries?

Not yet. I think the main reason behind it is the huge difference in terms of tariff rates in different countries and/ or its regions, also the ways of exporting dies and moulds are not the same.

Q How can the business relation be enhanced between the member countries?

Through the platform of FADMA exchanging market information among members (countries and/ or its regions), promoting complementarity in tooling trade, finding opportunities for mould-making capacity cooperation, enhancing trust in connectivity, and to promote the overall Asian tooling industry.

Q You also serve as the Chairman of China Die & Mould Industry Association [CDMIA], what are the current trends and demands in the Chinese market?

Entering the 21st century, the rapid development of China's manufacturing industry (especially automotive, IT manufacturing, household appliances, and construction materials, etc.) has provided a huge market for the tooling industry (from USD 14 billion in 2000 to USD 33 billion in 2015), with an average annual growth rate of nearly 10%. In last two years, the growth rate of China's tooling market has slowed down (average growth rate of 6%). New and high-end dies and moulds still rely on imports (USD 2-2.5 billion per year). Design software and CNC machining centres almost all rely on imports. Management technology needs to be improved, and highly professional skilled human resources are still in shortage.

Q According to you, what can Indians learn from their Chinese counterpart and vice versa?

India and China are both ancient civilizations, and their people are all intelligent and hardworking. In modern manufacturing era, China and India should strengthen the exchanges, learn from each other, and complement each other. The outstanding competitive advantages of Indians in software development and application, and their world-renowned business management talents deserve the admiration and learning of the Chinese people in particular.

Q What are your views about the Indian die mould industry?

Although I have been to India twice and visited some toolmakers in India, I am still short of a comprehensive and in-depth understanding of Indian die and mould industry. So, it is difficult to give an accurate evaluation of the die and mould industry of India.

By visiting the exhibition and communicating with Indian peers at the FADMA AGM, I feel that the Indian die mould market is still relatively small, especially the high-end tooling market for automotive and IT manufacturing industries has not yet dominated the main market. Therefore, the tooling industry is finding it difficult to attract the government's attention and support, so the investment in the industry is insufficient, and the tooling industrial system is incomplete.

Q What are the policies or techniques that has helped China achieve success. Do you think the same can be applied to the Indian market?

I think the most important factor in the success of China's economy development is the reform and opening-up policy carried out since the early 1980s. China's economy has transformed from planned economy to socialist market economy. China insists on promoting economic globalisation, introducing advanced technology and management experience, expanding international exchanges and cooperation, and vigorously developing manufacturing industry for improving the quality and level of people's livelihood, thus promoting the rapid growth of China's economy in the past two decades.

India has a different social system from China, so the way of China's Reform strategy maybe not necessarily suitable for India, I think. But to open up, to promote economic globalisation, and to develop manufacturing industry further, improvement in economic and social development can be applied to India for reference.

Q Your views on the future of Indian die mould industry...

In the recent years, India's economic growth has accelerated, and the manufacturing industry has been more valued and is developing rapidly. It provides market space and good opportunities for the development of India's tooling industry. With the domestic market driving and the support from the government, India's tooling industry will develop rapidly.

CDMIA is willing to cooperate more closely with TAGMA to promote the development of tooling industry in India, China, and Asia. On a closing note, I would like to wish TAGMA TIMES and India tooling industry a greater success! On the occasion of the 25th anniversary of the TAGMA TIMES newsletter, I would like to express warm congratulations to Indian peers on behalf of FADMA and CDMIA.

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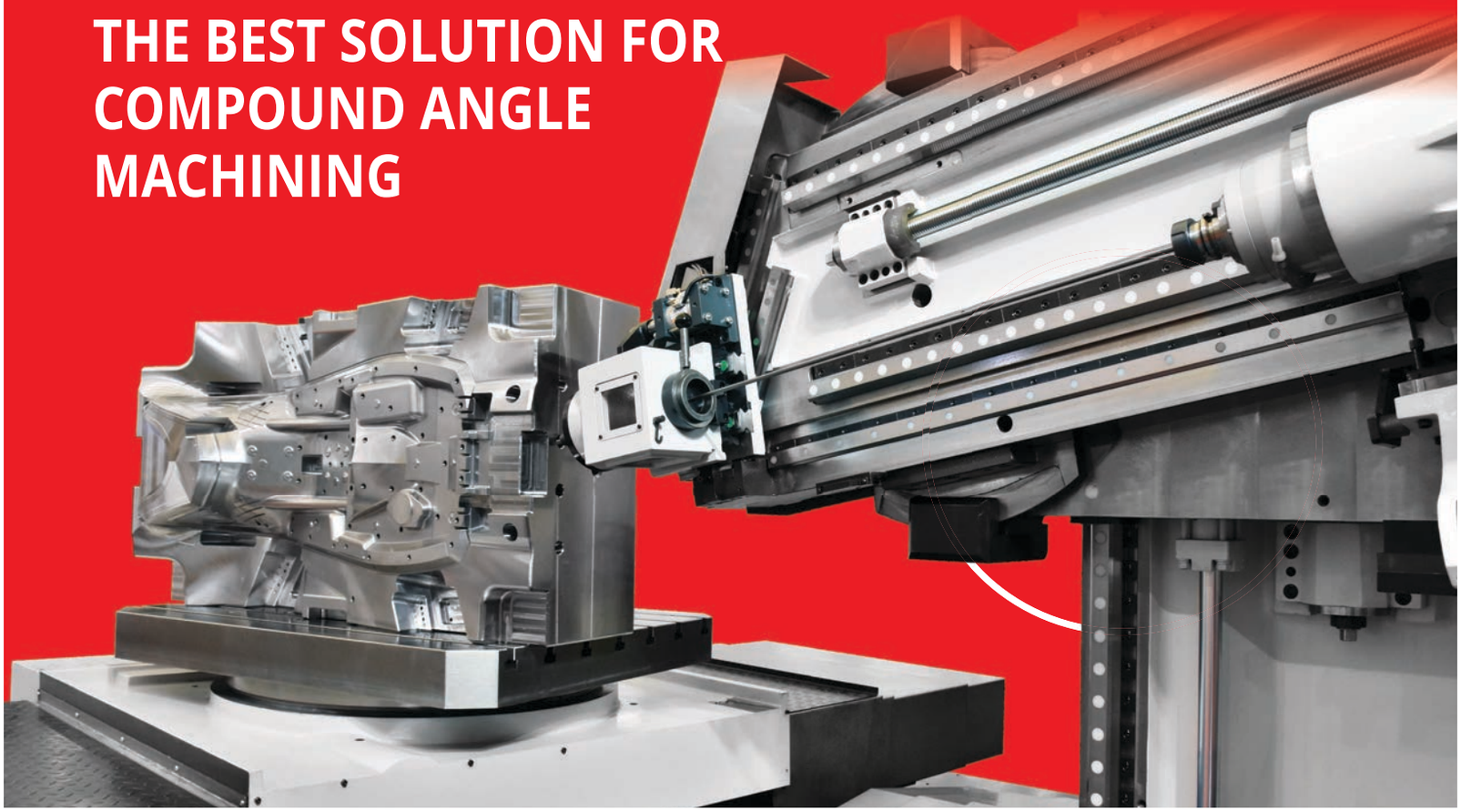

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"Improving 'Tool Room Management' system a must"

According to Parveen Satija, Managing Director, Stitch Overseas Private Limited, Indian tooling suppliers should switch from traditional development methodology to the modern approaches and technologies for machining, manufacturing and allied development activities. Excerpts from the interview…

Q How has the Indian tooling industry evolved over the years? How would you describe the current Indian die mould industry?

The die & mould industry is considered to be the 'Mother of manufacturing'. However, India is far behind the major global tooling hubs. Despite being one of the largest automotive markets and having the highest growth rate, we lose out in terms of technology and skilled workforce. Die & mould business require high quality, precision and timely delivery and to attain the above, extensive change in the manufacturing practices is a must.

Currently, the industry is evolving and coming forward to embrace the modern technologies by adopting better software's, high quality and productive CNC machines, equipment and quality CNC tooling.

Q Please highlight the major challenges faced by the Indian tooling suppliers?

This industry is very unorganised and scattered geographically. The tooling suppliers face several challenges like weak hand holding from the OEM's, poor adaptability to new

technologies, resistance to follow the systematic manufacturing practices, lack of highly skilled manpower, cost of imported raw materials and inadequate working capital flow due to inappropriate commercial terms from the OEM's / customers. Critical factors like poor efficiency, thin profit margins, requirement of shorter delivery times and stringent quality standards are also bothering the die & mould industry.

Q How can the government help in terms of skill and infrastructure development?

A very small percentage of the Indian workforce has any kind of formal technical education or vocational training. India currently has an annual training capacity which is less than 20% of the industry requirement of skilled manpower annually. Therefore, the government can do a lot more in terms of skill development.

The Government should contribute for achieving sustainable development through human resources development. It can be done by establishing training infrastructure, to provide quality training environment and capacity building. With regards to infrastructure, the government should focus on establishing more Technical and Vocational Education & Training (TVET) Centres and Polytechnics, supply training equipment and chart a very active labour market information system. For provision of quality training environment, the government should focus on improving institutions and rules & regulations at TVET, as well as work towards strengthening the national qualification system. Coming to capacity building, government should help in training government officials in policy making, training of trainers and periodic upgradation of curriculum.

Q What are the various financial benefits that the tooling suppliers in other countries such as China, Taiwan enjoy that can be implemented in India?

In our neighbouring countries, during the encouragement phase, there is tax subsidy for the initial 3 - 5 years. Their governments have sustained investments on automation, advanced technologies and infrastructure development. They provide loan and insurance at a lower rate of interest to establish tool rooms which meets global standards, run various programmes to produce highly skilled manpower and also invest & encourage R&D activities.

Q How can the engagement between OEMs and tooling suppliers be enhanced?

OEM's in India are pushing strongly for manufacturing dies & moulds locally under the Indian Government's 'Make in India' initiative. However, the required qualitative support to the tool manufacturing fraternity from the OEM's is negligible. There are two key aspects to the support—technological and commercial.

On the technological front, the OEM's can take the lead to support tooling suppliers in terms of design references, simulation, manufacturing techniques by providing continuous training. Coming to the commercial aspect, the payment terms of all the major OEM's are rather pro-customer. Better payment terms are required. The pricing levels should also be appropriate helping tool rooms to have better working capital flow and encourage them to re-invest in technology.

Q What can Indian tooling suppliers learn from their global counterparts?

Indian tooling suppliers have to improve 'Tool Room Management' systems. They have to switch from traditional development methodology to modern approaches and technologies for machining, manufacturing and allied development activities. They must learn from their global counterparts about shop floor culture, adherence to systems, effective communication, knowledge sharing, improved designs, efficient usage of appropriate softwares to minimize the rework/ development time and ensure the first time right approach.

The learning requires correction in the DNA of the system.

Q Future of Indian die mould industry…

The Indian die & mould industry is driven by automotive industry. With the government's aim to make automobile manufacturing the main driver of 'Make in India' initiative with a three times growth target by 2026, the growth potential of the die & mould industry is enormous.

According to the Indian tool room manufacturing forums, the domestic average market size of die & mould industry could double by 2021.

"Indian die mould makers need to enhance their capacity"

"The Indian industry is witnessing growth, thanks to the increasing demand from domestic players and major OEMs who have set shop in the country. These OEMs are looking for precision die moulds, to fulfil their requirement and match global standards the Indian companies are coming ahead and adopting the latest technologies. This has led to a more confident set of manufacturers who are now exporting to developed markets," says Anil Bhardwaj, Managing Director, Yamazaki Mazak India Pvt Ltd in conversation with Nishant Kashyap.

Q What are your views about the current state of the Indian Die Mould Industry?

The Indian die mould industry is doing better than ever before. This is the result of increasing demand and number of Indian tooling suppliers adopting the latest technologies to match their foreign counterparts. Earlier, Indian companies depended on imports for dies and moulds, but currently most of the demand in India is fulfilled by Indian suppliers. In fact, several Indian companies are now exporting to developed markets.

Q Tell us more about the evolving Indian companies…

The Indian industry is witnessing growth, thanks to the increasing demand from domestic players and major OEMs who have set shop in the country. These OEMs are looking for precision die moulds, to fulfil their requirement and match global standards, the Indian companies are coming ahead and adopting the latest technologies. This has led to a more confident set of manufacturers who are now exporting to developed markets.

Additionally, several OEMs are now opting for domestic suppliers to reduce the tooling cost and time consumed. Since Indian companies have progressed in terms of technology, OEMs are generating enough demands for the Indian suppliers.

Q What per cent of your sales comes from the die mould industry?

Right now, it's close to 7-9% of our overall sales in India, and we aim to achieve 15%. We are positive about the growth of the Indian die mould suppliers and want to help them achieve higher precision. The Die mould industry, in India, is going to be one of our major focus in the coming years.

Q Do you think Indian companies can compete with the global players?

Of course! we have the talent and capabilities. Indian process engineers have a sound understanding. We are no more entirely dependent on imports and have developed technologies here in India that are import substitutes. I believe, we can certainly match global standards; however, Indian die mould makers need to enhance their capacity to have a bigger share of the overall market.

Die mould are imported not because we lack the right technologies, but we do not have enough capacity to fulfil the growing demand.

Q You cater to several industries in India, how does the demands differ from industry-to-industry?

Automotive industry needs both precision and speed. In automotive mass production is the key, however, when it comes to die mould, precision is a must because these dies and moulds will be further used in automotive or other industries for batch production. So, the demand for CNC machines in die mould industry may not be as high as automotive but the industry certainly requires sophisticated machines.

Similarly, medical industry, which is growing rapidly in India, needs high-end technologies. The demand may be less, but precision is the top most priority. Earlier, most of the medical implants were imported, but now most of them are manufactured in India. Coming to aerospace, it not just requires precision, but the volume of the products in also very high. One aircraft needs thousands of parts and all of them must be perfect. There is no scope for a single defected part.

Q What is your opinion on additive manufacturing (AM)? Will it impact the machining industry?

In simple words, additive manufacturing is adding the material to create a desired shape. However, it still requires surface finishing which can be done by machining. AM will have a larger impact in the future, however it cannot replace the conventional manufacturing methods like machining and die making. There is a niche market for AM and requires know-how for the same. It will take some time for the industry to completely understand AM and its prospects, but it will certainly happen. AM is expected to be a must have technology in any manufacturing set-up in the future. However, I feel, a combination of both additive and subtractive manufacturing i.e hybrid manufacturing would be an ideal way to address the evolving manufacturing needs.

Q There has been a buzz around Industry4.0, how it will it impact the Indian SMEs?

Industry 4.0 is not something that will take away someone's work, it aims to improvise the overall process. It intends to make the manufacturing process smart to improve productivity, reduce production time and wastages. Industry 4.0 essentially means gathering the important data which was not available otherwise, analyse it and use it for predictive and preventive purposes. It can be used to monitor the health of the machines and production cycle. With industry 4.0, the management can monitor the processes and machines among others and take actions accordingly.

Q Do you think it is viable for the SMEs to adopt such technologies?

Yes, the implementation cost may be on a higher side, but going ahead will provide higher returns. This is the case for any high-end technology, they seem to be costly in the beginning but with years of experience one can realise that the returns are multi-fold. For example, smart phone, when it was introduced most of us believed it is complicated and not cost effective, but today it is difficult to find someone without a smart phone. So, I would say industry 4.0 is in that evolution phase and will gain more popularity in the coming decade.

Q Automotive is the biggest customer for mould suppliers and machine tool manufacturers. What are the other sectors that are creating demand for these companies?

Aerospace is coming up in a big way. There is a lot going on in the Indian aerospace industry. Along with global giants like Boeing, GE, Rolls Royce and Air Bus, among others Indian conglomerates such as TATA, Mahindra, Godrej, Ashok Leyland are also ramping up or making a foray into this sector. PSUs are also enhancing their capacity. The industry is growing in double digit and I feel it will continue for next few years making India a lucrative aerospace destination.

Apart from aerospace, semiconductor, electronics and home appliances, are also creating good demand. With the economy doing well and rise in the purchasing power of average Indian, the demand will continue to rise, positively reflecting on tooling and machine tool suppliers.

Q Future Outlook

With the Indian economy growing rapidly, I am quite positive about the Indian market.

"India will be the mould centre of the world in the next 10-20 years"

India is very likely to be the next China. China's mould industry will gradually shift to India as costs increase. India will certainly lead in terms of development of the mould industry in the future.says Weiwei Kang, Director, Vanto Industries Pvt Ltd

Q Please tell us more about ACC Mould…

Our enterprise culture with a focus on quality and harmony has helped us stay ahead in the competition. We specialize in providing one-stop processing & service with our best-in-class processing equipment and smart manufacturing systems.

At ACC Mould, starting from the raw materials, we are capable of completing all the process in one stop. It not just saves procurement time, but also reduces the processing cycle leading to cost saving for the customer.

We have been also been qualified with TS, ISO9001-2000 Certificate in China and well-equipped with world class machine and equipment from Germany, Switzerland, Japan, Korea and Taiwan. Our facilities are fully equipped with the latest CNC machines, sophisticate CAD/CAM and analytical technology, allowing us to help our customers minimise the time taken to reach the market.

Q China is considered to be a manufacturing hub across the globe. What makes China unique?

Chinese government is very supportive in terms of fostering the domestic manufacturing companies. There are several government initiatives that act as a growth catalyst for the manufacturing companies. Some of the benefits are free industrial land, 24-hour uninterruptible power supply, good tax subsidies, low-interest bank loans, convenient transportation and good government policy support, among others.

Q Please tell our readers about the current state of the Chinese tooling industry?

China's die mould industry is very strong with about 30,000 mould manufacturers in the country employing about 1.5 million professionals. The market size of Chinese die mould industry is about Rs 2,20,000 Crore.

Q There aren't many foreign tooling companies setting up shop in India. What attracted you to the Indian market? What kind of demand do you see in India?

India has a population of 1.3 billion and GDP growth rate of around 7%, which we expect will further grow. The demand for plastic parts for consumer goods is rising, we also expect the demand for home appliances and automobiles will match up to of China in the future.

Q Tell us something about your Indian operations…

Coming to the Indian market, Vanto Industries Pvt. Ltd. is an integral part of ACC Mould. Vanto Industries is spread across 5,000 sq feet and houses VMC Gantry Machine, EDM Double Head, Gun Drilling Machine, and Wire Cut Machine among others. Our facility is located in the heart of mould manufacturing hub, Vasai. Our primary objective is to support Indian mould manufactures.

Q According to you, what can Indians learn from their Chinese counterparts and vice versa?

Chinese friends work very hard, on the other hand Indian friends have a better sense of cost control. Additionally, India will certainly lead in terms of development of the mould industry in the future.

Q Since you are working very closely with Indian companies. What kind of fundamental differences do you observe between India and China in terms of demand?

We all need good products, but the Indian market is more price sensitive.

Q What are the various challenges that exists in India for a die mould manufacturer?

The major challenges faced by the India industry is power supply, transportation, availability of skilled employees, modern workshops and mature facilities.

Q Your take on the future of the Indian tooling industry…

India is very likely to be the next China. China's mould industry will gradually shift to India as costs increase. I believe, India will be the mould centre of the world in the next 10-20 years.

Technology Driven Productivity

Vineet Seth

Manjunath ML

Change is cascading throughout manufacturing at unprecedented speed. Amid this disruption, it's no longer simply about survival of the fittest. It's about survival of the fastest and most flexible — those that can surf atop the waves of change, rather than be drowned by them.

Manufacturing has undergone dramatic change in the last several decades, and now machines are creating many of the connected, smart products that consumers demand. Automation plays a critical role in production, which means that many tasks that have been historically managed by skilled workers are now being done by machines.

Technology is the catalyst behind manufacturing's ongoing transformation. Technologies and trends such as are Industry 4.0, additive manufacturing, Artificial Intelligence, robotics, cloud technology, are some of the futuristic technologies that will drive the future of manufacturing. However, the basic technologies such as CNC machining and CAD/CAM remain core of the manufacturing.

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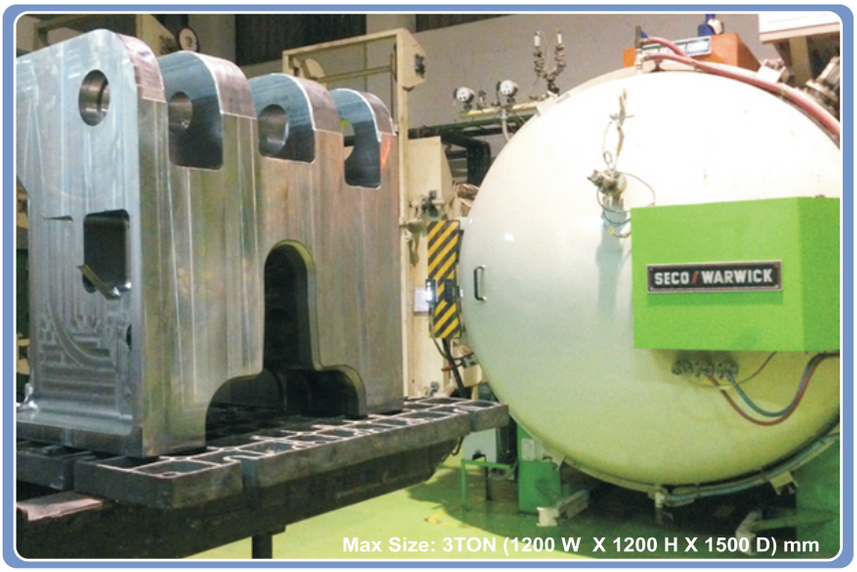

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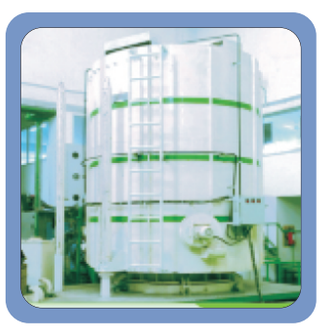
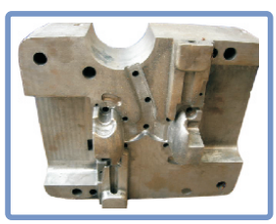
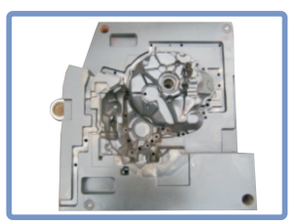
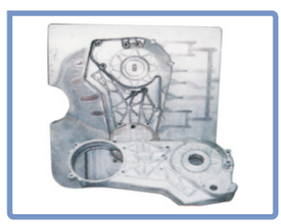


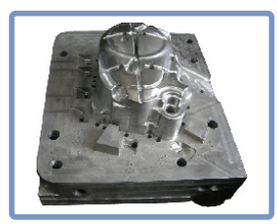
PROCESSES

- Vacuum Nitriding
- Gas Nitriding
- Gas Nitrocarburizing
- Pre & Post Oxidation









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"It is extremely vital for Die Mould companies to invest in the right CAM software"

"Tool utilisation factor is of paramount importance, considering that longer the tool life, higher the productivity. Therefore, modern strategies that assist in deriving full tool life are a must in a CAM software, compared to those that are traditional," says Vineet Seth, Managing Director - South Asia & Middle East, Mastercam APAC in conversation with Nishant Kashyap. He also extensively discusses about the latest trends, hybrid manufacturing, industry 4.0 and the future plan for Indian market.

Q Latest trends in CAM solutions…

CAM software are focused on improving efficiency, speed and quality of toolpaths. These tend to have a direct impact on our customer's business and our primary goal is to strengthen and innovate in this space.

A major focus of the CAD/CAM industry, currently, is bridging the gap between subtractive and additive manufacturing. Another area of growing interest is the use of Industrial Robots for applications like milling, tape-laying and laser cutting.

On the business front, CAD/CAM industry was facing an inevitable consolidation – which started happening post the 2008 slow-down and continues even today – resulting in many well-known brands merging with others. Obviously, this means that there will be a further consolidation in products and services.

Q Integrated CAD/CAM solutions and its benefits…

An integrated CAD/CAM system is one, in which various modules such as Turning, Milling, Mill-Turn, WireEDM etc., are operational within the same window and the same interface. An integrated CAD/CAM solution provides a unified interface, which helps boost productivity, reduce training efforts, as well as streamline toolpath generation process.

A full-featured CAD/CAM program like Mastercam can have more than 800 separate functions, each with its own name and icon. Whatever the challenge, there is likely to be a function in the CAD/CAM toolbox that can assist and make the job easier. On the other hand, accessing a function from such an expansive tool set can be like searching for a needle in a haystack. A well-designed integrated CAD/CAM interface enables features, that users require routinely, and puts them at their fingertips, while making it easy to identify and activate features that are needed less frequently but also boost precision and productivity when they are called for.

Q It is largely referred that hybrid manufacturing (additive + subtractive) is

going to be the future of manufacturing. How will it impact the CAM service providers?
Hybrid manufacturing method is technically more complex than the current method of cutting shapes from blocks of metal. CAD/CAM will continue to play, in fact, an even more significant role in the Hybrid manufacturing process. Beginning with designing the near net shape, support structures and 3D build process plan, CAD/CAM software will control the entire process ending with the final shape being cut with codes generated by CAM software, on the near-net shape as input model reference.

The benefits of such processes will be - reducing the carbon foot-print, achieving conformal shapes, reducing machining efforts, reducing material scrap and in light-weighting solutions – to name a few.

Q How are CAM solution providers gearing up to latest technology trends like e-manufacturing solutions?
We are working with leading Industry 4.0 initiatives to enable e-manufacturing solutions.

For example, searching for up-to-date, accurate tooling data can be a tedious, time consuming task for CAM programmers. A myriad of websites, catalogs, and other sources are available for the task, but typically require manual entry methods that may result in data inaccuracies as the NC program takes shape. Every tooling manufacturer offers their own approach to make their product data available. It's not only up to the user to find out if a tool is in stock, but equally important to ensure that its associated data files are comprehensive enough to get the job done right in CAM software.

Q What role will CAM play in terms of implementing industry 4.0 or smart factory?
CAM software will be an active component of the total manufacturing solutions within Industry 4.0 implementation. Various knowledge-based inputs will be fed in into the CAM system, thereby allowing the right parameters to be used for the right machine environment. The output too, can be provided to a middle-ware that processes outputs for different machines, for the same component, if need be. Just in time programming could be a possibility provided a closed-loop can be established with machining time, enabling optimisation in the CAM process.

The benefits of such processes will be - reducing the carbon foot-print, achieving conformal shapes, reducing machining efforts, reducing material scrap and in light-weighting solutions – to name a few.

Q How important is it to have a right CAM software for die mould suppliers?
It is extremely vital for Die Mould companies to invest in the right CAM software. A CAM system for complex machining must have the following capabilities -

- Accurately import and/or repair CAD models from various CAD systems.
- Simple to learn & easy to use, yet powerful enough to achieve the most complex task.
- High Speed & High Efficiency Machining Routines.
- Multi Axis Strategies with advanced configuration options & Machine simulation.
- Speed for toolpath processing, as well as post processing.
- Support for all machine tools & controllers, especially in Post Processing.
- Output Gouge/Collision free toolpaths.
- Customisable (with API) for advanced and bespoke application development for power users.

Tool utilization factor is of paramount importance, considering that longer the tool life, higher the productivity. Therefore, modern strategies that assist in deriving full tool life are a must in a CAM software, compared to those that are traditional.

In addition to the above, what's more important is the knowledge and experience of the team that supports such a CAM software - as tools without the right application often are counterproductive.

Q How important is India as a growth market for you?
We have a vast potential in the region and truly believe the manufacturing growth is yet to take off. It can only go upwards. Our new organization here, is comprised of a highly experienced, well-established team of professionals from sales, marketing, technical, and channel expertise gained in the Indian CAM market over the years. We have plans to increase our overall staffing levels in India to more than 100, which is a demonstration of CNC Software's (Mastercam's parent organisation) ongoing commitment and investment in this market.

We also have a simple and honest belief. We grow only when our customers and our customer base grow. For the customers and the customer base to grow, we need to deliver quality solutions and above all timely support & hand holding during crucial times.

"It is very important to upgrade skills and adopt new technologies"

"With the ever-evolving electronics industry, WEDM technology has also advanced. There are machines available in the market that provide very high cutting speed, mirror like surface finish and micron level accuracy," says Manjunath ML, Managing Director, CONCORD United Products Pvt Ltd

Q Invented in 1943 by two Russian scientists, how has the EDM technology evolved with growing demand for productivity and reliability?

EDM Technology was developed long back during the 1940's, though its commercial usage started much later in 1970s. The first CNC Wire EDM (WEDM) made its appearance only in 1976. The technology has evolved over the years, today we have WEDM machines which are used for extremely demanding applications.

WEDM Machines are primarily divided into two types— one that uses brass wire and the other that uses molybdenum wire. Until 2000, customers in India were primarily using machines with brass wire. Most of these machines were imported from Switzerland and Japan. Subsequently, few companies in India started manufacturing these machines, Taiwanese brands also gained popularity in India. These machines offered high degree of accuracy, finish and speed. However, the ownership and running costs of these machines were extremely high, preventing small entrepreneurs/SMEs from investing in this technology.

Concord was one of the first companies to introduce molybdenum wire machines in 2000. The advantages of this technology include – the ability to reuse the wire, low power consumption and relatively easier operation.

Thanks to the above factors, the running and ownership costs came down, encouraging several small companies to use WEDM machines. The speed, surface finish and accuracies of these machines, though not in the same league as the brass wire machines, was acceptable for 70% to 80% of normal tooling

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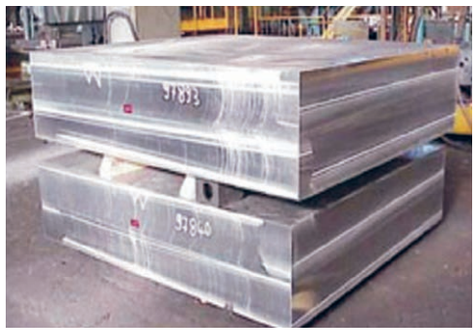
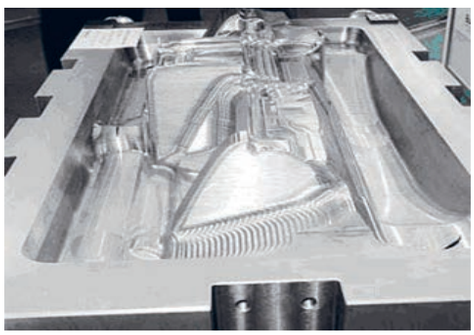
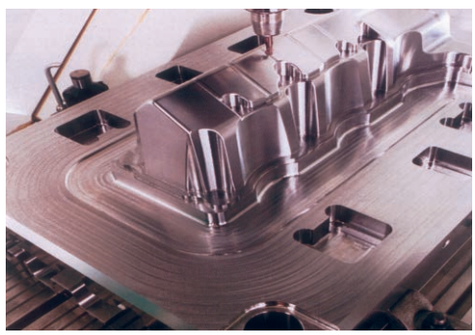


6 Sides milled with Lifting hole



3D pre-Milled Dash board Mold



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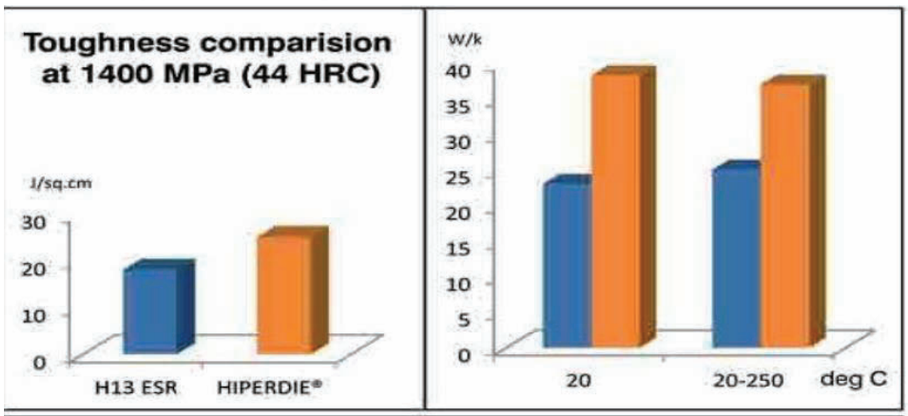

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applications. These, and over the years, enhanced quality of machines and service, are some of the reasons why the molybdenum wire machines took off in a big way in the last 10 years.

Q What are the latest technology developments in EDM technology?

With the ever-evolving electronics industry, WEDM technology has also advanced. There are machines available in the market that provide very high cutting speed, mirror like surface finish and micron level accuracy.

Q What are the various applications and benefits of EDM in mould manufacturing?

WEDM and Spark EDM have been the two integral parts of die and mould manufacturing for a long time. With our molybdenum wire machines, now a user is able to make long punches without any taper and electrodes for spark EDM and small ejector pin holes which were earlier difficult to make in conventional machines.

Q Please explain the different types of EDM processes and their applications?

There are three types of EDM process commonly used in the industry. Wire EDM, Spark EDM and EDM drilling. Wire EDM process is used to make profiles like a punch & die, while Spark EDM process is used to make blind profiles like injection mould cavity. EDM drilling process is used to make very small holes in any conductive material with low to high hardness.

Q Do you think technologies such as additive manufacturing and advance milling operations are a threat to EDM process? What are the advantages of EDM over these technologies?

Additive Manufacturing is an evolving technology which has eliminated constraints in the conventional manufacturing processes. WEDM is being used as a complementary machine by many of companies using Metal 3D Printers.

With the ever-evolving electronics industry, WEDM technology has also advanced. There are machines available in the market that provide very high cutting speed, mirror like surface finish and micron level accuracy.

Advances in CNC Milling Technologies and availability of excellent cutting tools has the potential to affect Spark EDM technology.

Q How you see the market for EDM machines in India?

As we are primarily into WEDM machines, I can say the market is still growing for molybdenum wire machines. Just to illustrate this point, I would like to add, China manufactures over 30,000 machines in a year, whereas the India stands roughly at 300. The possibilities of using WEDM machines in industries other than tooling is enormous.

Q How do you compete with the global players who have set shop in India?

At present manufacturers from Switzerland, Spain, Japan and Taiwan are competing for a fair share in the brass wire machines market in India. However, Concord being in the reusable molybdenum wire machine market, is the market leader with over 50% market share and an installation base of over 900 machines. With a 'Customer First' approach, Concord is known for its excellent after sales support. After setting up a fully integrated facility in Bengaluru, more than 50% of all our machines sold in 2017-18 were made in India. We hope to sell more locally made machines this year and, in the years, to come. Also, we are working towards continuously improving our machines at our R & D division to serve our clients better.

Q Your advice to Indian mould manufacturers…

It is very important to upgrade skills and adopt new technologies. A benchmarking exercise against global tool rooms of similar size would be a great starting point.

Q The future of Indian die mould industry…

Die and mould industry is an integral part of any developing economy. With India poised for high growth in the next few years, the industry has a great future.

Need of The Hour

Indian Economy is slowly picking up strength. Globalisation and availability of cheap labour in India, is making our Country a destination of all sorts of outsourcing. Businesses are blooming and entrepreneurial activities are on a high. India is among the 'young' countries in the world, with the proportion of the work force in the age group of 15-59 years, increasing steadily. Everything seems positive but the big question is, are we having enough skilled manpower to embrace the change?

Amidst the noise surrounding 'Make in India', 'Skill India' and other such initiatives rolled out by the current government, one thing is for certain: Indian policy makers have decided to tackle the issue of a weak manufacturing sector on a war footing. From 2010-11 onwards, a decline in GDP growth in the manufacturing sector was witnessed and in order to make the sector globally competitive, the government had announced the National Manufacturing Policy in 2011. The policy looked at enhancing the share of manufacturing sector to India's GDP from 16 to 25 per cent and to create 100 million jobs by 2022.
However, there are sectors such as die mould, machine tools, forging, etc are still in need for major policy reforms in terms of skill development and infrastructure. No any nation can have an advance manufacturing industries without having strong die mould and machine tool industry. The industry is still been struggling to attract top talent in the industry, also the current graduates are not able to meet the industry expectations. Experts believe that the more emphasis on practical training and industry-academia partnership could be one approach to tackle the same.

India's manufacturing segment has the potential to touch $ 1 trillion by 2025 and account for 25-30 per cent of the country's GDP to create up to 100 million domestic jobs by 2025. For that to happen, however, introduction and implementation of far-sighted policies is imperative, along with a holistic understanding of the scope of India's manufacturing sector.

Let's hear it from the industry experts what they feel about the current scenario in engineering segment and how to address the skill development issue.

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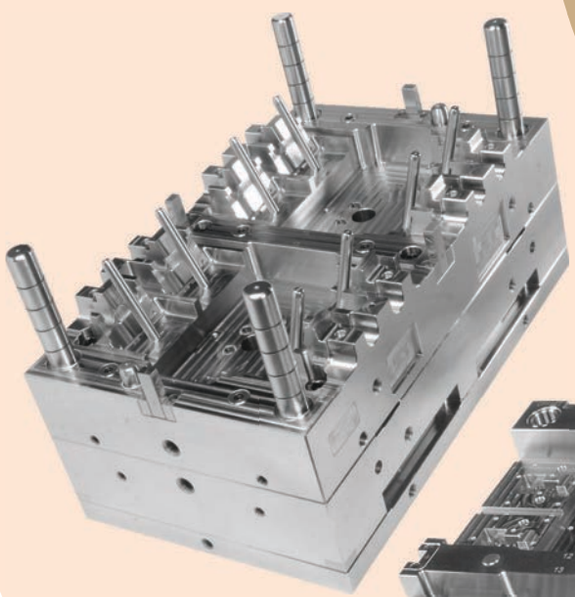

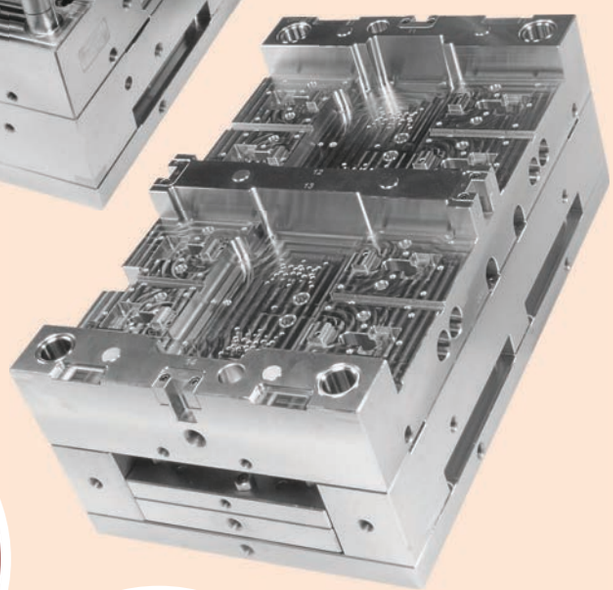

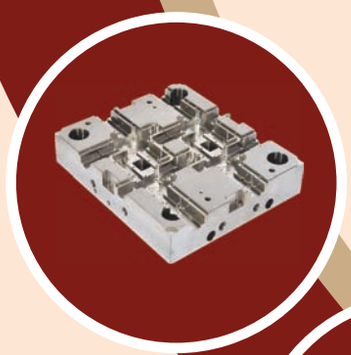

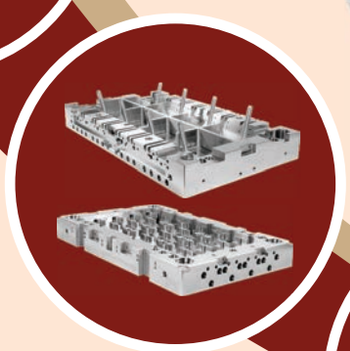

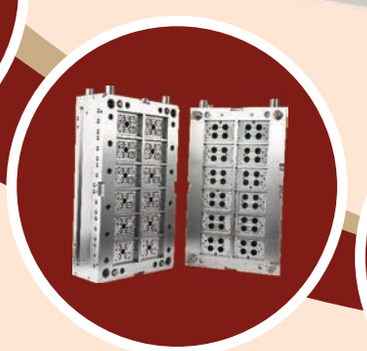

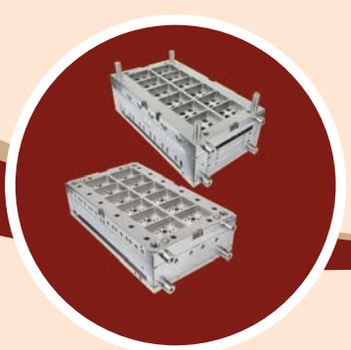

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"Manufacturing companies can help by accepting students for internships, contributing and giving them necessary assistance and support for industry projects, articulate a part-time working model for them while pursuing studies, allowing colleges to bring their students batches for industrial visits and by being open to collaborating with the educational institutes to elevate the overall quality of knowledge imparted in our education systems," says Vikas Khanvelkar, Managing Director, DesignTech Systems Ltd.

Q What are your views about the Indian engineering education and the skill set of Indian engineers?

We have some of the finest engineering institutes in India, producing technically sharp engineering graduates. But the volume of the 'Industry Ready' engineers is much smaller compared to the demand. It is necessary to bring in a strict regulatory system across government funded, private and autonomous colleges that will monitor and maintain the quality of education.

Though there are government bodies measuring and monitoring the education standards, we need stricter rating, grading or ranking system that would make it necessary for the colleges to meet the required quality bar.

Faculty development programmes should be conducted in regular intervals to create awareness about latest technologies and other developments among the professors/teachers. Course curriculum should be updated more frequently. Students should be given more hands-on exposure for assimilating and comprehending the applications based knowledge.

Only a limited number of 'Quality Engineering Institutes' will not be able to meet the demand for trained manpower. To meet the industry demand, a standard quality of education should be maintained throughout the educational institutes, colleges and other academic-set-ups.

Manufacturing companies should start accepting students for internships

Coming to the skill set of Indian engineers, I would say the industry is fast growing backed by technology, but as mentioned above, the syllabus is not updated accordingly. Which is why, the knowledge possessed by the graduating engineering students is incongruous as per the industry expectations. The students are then compelled to take self-initiatives to upgrade and update their knowledge to be considered employable by the industry. So we do have a huge pool of young and enthusiastic graduates, but sadly they cannot make productive contributions to the industry growth soon. Setting up more engineering institutes is not the answer, but updating the syllabus and revolutionising learning methodology is the key to bridge this gap.

Q According to the National Skill Development Corporation (NSDC), India will need to add 109.73 million people by 2022 to cater to 24 crucial sectors in the country. Do you think India is ready with such a huge number of skilled manpower to serve the growing manufacturing sector?

This is the classic case of balancing or finding the right equilibrium of demand and supply. When the industry demand or new employment opportunities are lower, many of the graduating engineers find themselves without a job. But then, when industry demand is high, and the supply of rightly trained manpower is scarce, still most of the engineers remain unemployed. At the moment, India's growth rate looks promising. The recent industry report looks very optimistic with the growth rate touching a little above 8%. This is the best time, especially for the job market. Engineers can find exciting opportunities that can provide their career a good start. With projected increased industry growth and output, the crunch in rightly skilled manpower can hinder the pace of the industry's growth. India at the moment is getting ready to supply this workforce to the industry. The government of India, through their public-private partnerships are working to set up dedicated training centres and skill based centres of excellence that will introduce students to the latest technologies and industry practices. This will augment their chances of employability and also help industry source the rightly trained manpower to support their growth objectives. While, we might not be completely ready to cater to the demands of industry as yet, but we are well equipped and are gearing ourselves to meet that demand with expected proficiency and skill sets. Having said this, getting 109.73 million people industry ready by 2022 is quite a tall order.

> When the industry demand or new employment opportunities are lower, many of the graduating engineers find themselves without a job. But then, when industry demand is high, and the supply of rightly trained manpower is scarce, then also most of the engineers remain unemployed.

Q Several tooling suppliers in the country face the challenge of finding skilled manpower. How can this be addressed?

There are numerous ways to address this situation:

Empirical Learning Methodology: Our educational institutes focus more on imparting theoretical knowledge as compared to practical knowledge. Students can best understand a technology or system only through hands-on training. Demonstration of even the most basic concepts and fundamentals through practical applications is invaluable for students to understand and internalise the learnings. The industry after all is looking for people who can apply their knowledge in practice besides the theoretical definitions of how systems work. Involving industry experts while articulating course syllabus and teaching curriculum. This will help educational institutes bring in industry insights and practices in to the learning environment making the students future ready.

Industry internships: It should be made compulsory for the graduating engineers to undergo one year of working internship in the industry before they are considered for campus placements. This will give students the industry exposure with insights into the latest technologies and processes. If the companies are happy with the capabilities and potential demonstrated by the interning candidate, they might even consider hiring him/her.

Dedicated skills enhancement training centres: Our government is already active here; centres of excellence focusing on skill sets and domain are being set-up across the country. These centres will not only provide a platform to the students to learn about new skills and advanced technologies, but will also make it easier for the industries to spot the right talent.

Q What are the models that various developed nations have practised over the years in terms of education and skill development that can be implemented in India?

There are certain good practises that developed nations have in order to train their manpower's that can be applied in India as well:

- Compulsory industry internships
- Dedicated centres of advanced skills learning
- Public-private initiatives
- Industry based project reports
- Dedicated advance labs or workshop areas in the institute facilities where students can apply and practice their knowledge

In India, we certainly practise these things however we need improvements.

Q How can the government help sectors like die mould and machine tools in terms of talent?

Government is already setting up centres of excellence and advanced skill learning facilities that will impart domain specific and industry oriented knowledge and trainings to the students by providing the right exposure. Introducing skills sets specific standard certification courses can also help and encourage students to develop an expertise in the respective area or field. For example – six-sigma certified, Cisco certified etc.

Q What are the various government initiatives related to skill development in manufacturing sector?

The Skill India initiative by the government hugely focuses on providing skill sets based training to the students. While, Make in India initiative focuses on creating employment opportunities for the trained manpower. Government is allocating huge funds, and is investing heavily in order to set-up the right infrastructure across the country to provide equal learning and job opportunities.

Q How can the manufacturing companies help in skill development?

Manufacturing companies can help by accepting students for internships, contributing and giving them necessary assistance and support for industry projects, articulate a part-time working model for them while pursuing studies, allowing colleges to bring their students batches for industrial visits and by being open to collaborating with the educational institutes to elevate the overall quality of knowledge imparted in our education system.

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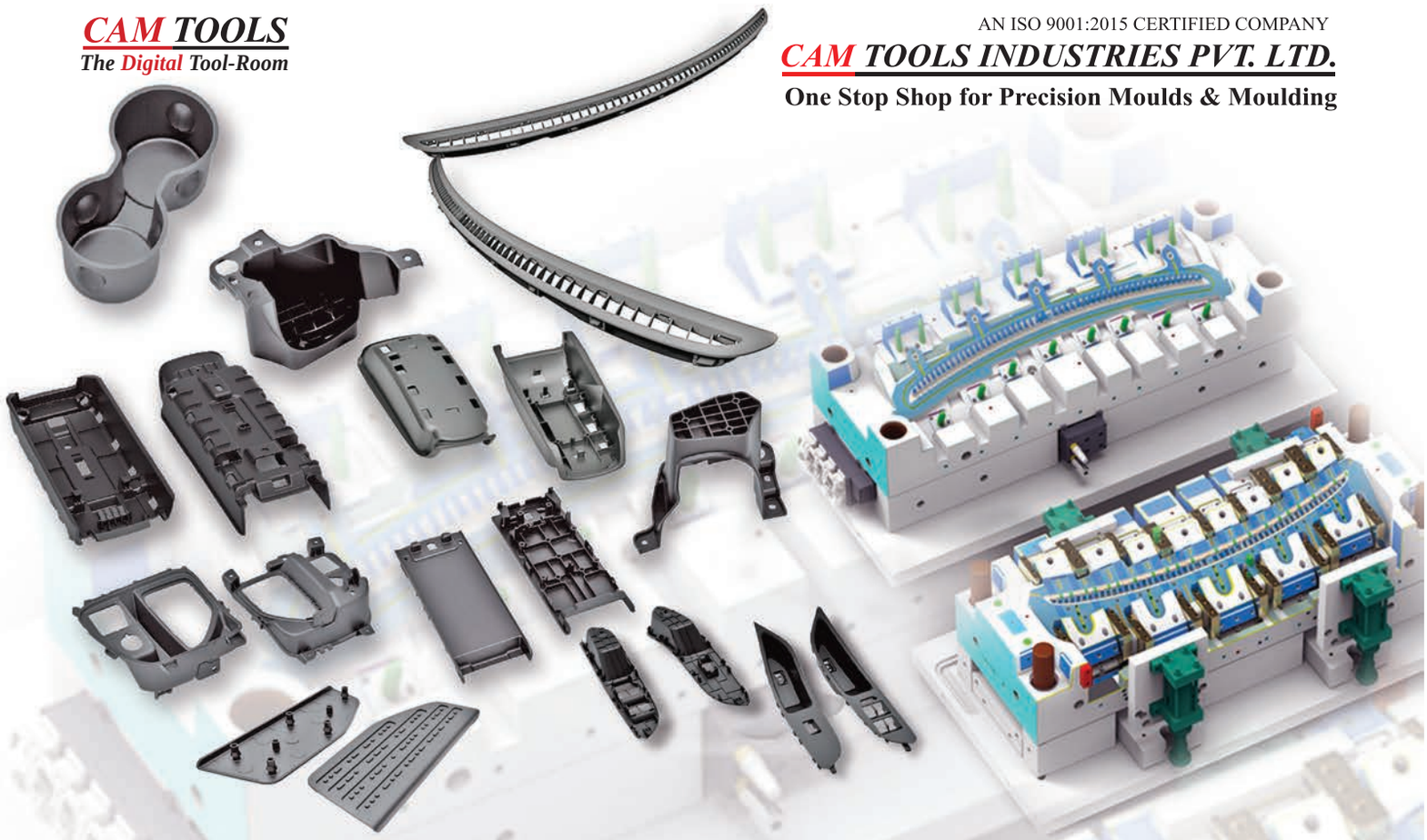

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"Education system and infrastructure need immediate attention"

Ravi Moolya, Director, Speroni India Pvt Ltd

Q What are your views on the skill set of Indian engineers?

Well, there is a huge gap between the requirement and supply. The industry believes that recently passed engineering graduates are not able to meet the expectations, at the same time engineering institutes also do not have proper infrastructure to train students. Industry expects the institutes to deliver skilled engineers who are well versed in the latest manufacturing trends and technologies. However, the industry also needs to join hands with institutes to train new engineers and engage more with academics.

Q According to National Skill Development Corporation's (NSDC), India will need to add 109.73 million people by 2022 to cater to 24 crucial sectors in the country. Do you think India is ready with such a huge number of skilled manpower to serve the growing manufacturing sector?

Again, this is contradictory according to me; manufacturing industries are aiming to reduce man force by using automation. All the companies are looking for high level of automation and digitisation in order to reduce human errors. Many believe, this will take away some of the jobs. However, there will be need for skilful professionals who are able to match the global standards and understand the new technology trends. We need to bridge the gap between institute output and manufacturing need. Also, it's a huge number to achieve by 2020, but I must say the right approach in right direction has started. It may be slow but at least the work has started.

Q Almost all the tooling suppliers in the country are facing issues related to finding right and skilled manpower. What are the ways to tackle the situation?

We expect skill, precisely for manufacturing, but the question arises why do we require skill? Especially, when the latest CNC machines are backed by artificial intelligence. Why do we depend on human workforce rather than technology? In 2014, we initiated ZSM (Zero Stock Machining) in sync with Machine Tool - CAM -Toolings. I would say this is the only answer to tackle the situation of finding right and skilled manpower.

Q What's your opinion about the Indian education system, especially engineering education?

Well, it is difficult to comment, as most of institutes are run by people who do not have proper domain knowledge. Hence, how much can they understand the need is the question. As said earlier there is a gap between the need and supply. Institutes need to uphold the synergy with the current need of industries by arranging to tie up with industries – mainly SMEs.

The current curriculums of Indian engineering institutes, except a few, do not have specialisation of some of the basics of manufacturing such as machine tools, die mould, forging and casting among others. These areas form the back bone of manufacturing. We need to have masters' programmes or higher education related to these areas in order to become a manufacturing powerhouse.

Q What are the models various developed nations have practised over the years in terms of education and skill development that can be implemented in India also?

I cannot talk about the other nations but in my extensive travel to Italy, Singapore and Thailand, I observed that these countries focus on practical training. They have proper balance between theoretical and practical training. Apart from this, I also believe students in these countries have compulsory internships programme while studying. It provides them the actual knowledge of the industry.

Q How can the government help sectors such as die mould and machine tools in developing talent?

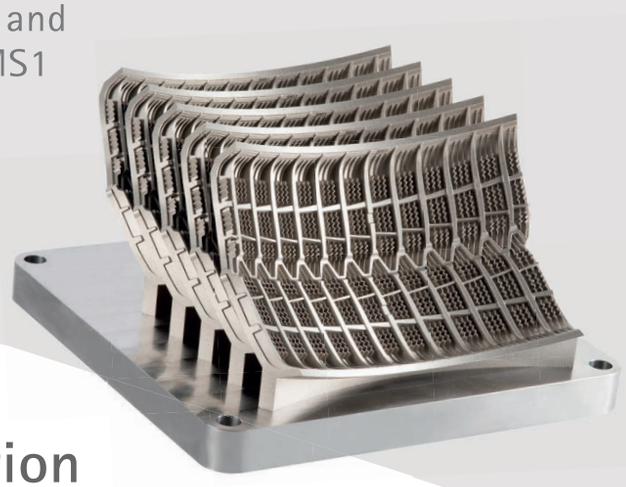
Education system and infrastructure are the two bottlenecks and needs immediate attention from the government. In terms of education, as said earlier, there is an urgent requirement for a revised curriculum that focuses more on practical training and internships. Government can also help institutes to set up labs with all the necessary equipment.

Apart from this, the government can also start specialised institutes focusing on die mould, machine tools, etc.

Tire application

Snow tire molding segment

Concept of additively manufactured tire segment produced with an EOS M 290 and EOS 400-4 using EOS MaragingSteel MS1



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"A project manager must also act like a portfolio manager"

Guruprasad, Head – Projects, Mutual Industries Pvt Ltd

Q What is project management according to you?

I believe a project manager is the customers voice within any organisation and project management is nothing but change management.

A project manager plays a key role in terms of customer expectation, understanding Their requirement and monitoring the project progress with respect to time, quality and budget.

Project management is the application of organizing the knowledge, skill, tools and techniques of a temporary series of activities to deliver the project requirements. It follows the process of logical project management approach of Initiation, Planning, Executing, Monitoring & Control and Closing.

Q How important is the role of a Project Manager in the tooling industry?

It is important to have a dedicated project manager from conception to the completion. The role of a project manager is to skilfully and effectively utilise resources like time, people, machineries and equipment's. By having a project manager as the key coordinator, the manufacturing team can continue to focus on their core areas of delivery. This structured methodology provides the framework, processes, guidelines and techniques to manage the people and the work which increases the probability of a successful project execution. Going ahead, it also adds value to the organization and the project.

Q It is not unknown that at times customers make changes in design, specifications while keeping the same deadline. How do you deal with such situations?

Almost every project goes through changes, which I would call continuous improvements.

Managing change can be complex and daunting. Dealing with such a challenge with no revision on deadline through the project management approach proves the skill of the project manager. He/she applies intuitive skills for situations that are unique for every project. It involves the art of managing the stakeholders tactfully with strategic planning and making the team aware of the customer expectation.

We discuss with customer to know kind of changes expected on CAD or specification. Many a times it's only some features getting changed and not the complete product design so collaborating

with the customer, making parallel activity on RM ordering, rough machining, ordering of long lead items, which are not affected from change management is key to deal to deal with such situations.

Q How challenging and exciting is a project manager's role in tooling industry?

A project manager's role in the tooling industry is very challenging, so one should handle the constraints during the project execution phase. A project manager must also act like a portfolio manager. Apart from these, previous lessons learnt becomes the key input for effective planning for consideration of accommodating the change requests based upon the trial results or project specifications.

Q According to you what are the necessary skills required to be a good project manager?

The project management framework sets standards for project deliverables, including tracking and communicating schedules. It also includes setting measurable delivery goals & milestones, performing stage-gate reviews and conducting quality measures within budget. The project team has the flexibility to determine precisely which processes are required to get the job done, but how they do it depends on the skills of the project manager.

So, the project manager must have a good skill set to look after planning, communication with hands on capability of review mechanism and goal setting parameters for the team. He must also be a team player with the ability of using the right resources as per requirement.

Q What are the important factors to keep in mind while managing challenging projects?

The strategy and vision of the organisation is linked to the execution of the assigned projects. Project managers are responsible to meet those expectations. The periodic reviews with team members, CFT, functional heads (not applicable for projectised organization), executive management and the sponsor/ customer are some the most important factors that help better execution of a project. Inter personal relationships with the executing stake holders can also be fruitful during such situations.

Q How does a typical day in the life of a project manager looks like?

A project manager starts the day with the list of activities to be carried out followed by execution through respective team / CFT meetings and monitoring the results of implemented agreed actions. By the end of the day he/she must summarise the closing status of each of planned activities of the day followed by the strategic planning for the next day/ week/ month/ year.

Q What would you like to say to the aspiring project managers?

Project managers are the CEO of their respective projects. Project management is a collaborative way of execution, a disciplined structured process that requires strong leadership quality. Every project plan should begin with an explanation of the business value that the project brings to the organisation within the defined delivery time by utilising the right resources.

Focus on measures and processes tied to the business goals, collect the data or learning from every project and make it available to everyone. Each stakeholder must know their accountability and contributing parameters for the project execution.

To be a successful project manager, one must focus on effective communication, be able to resolve team conflict and be target oriented keeping in mind the time, cost and resources.

"Be aggressive. Be confident"

Manjusha Jagtap,
Director, Kohinoor Industries Pvt Ltd

Q Brief us about your journey in manufacturing industry.

Though I began my career as a professor of Computer Engineering in 2005, I have been associated with the manufacturing industry since 2007, thanks to my husband Paris Jagtap.

The biggest challenge for me was lack of in-depth technical knowledge in manufacturing, but I wanted to take this leap. The actual journey towards my ambition started in 2014, when I started M/s Kohinoor Industries with a vision—'Precision to Perfection'.

I also received immense support from Godrej tooling. With their support, our team worked very hard in the last two years and won the high precision award from Godrej tooling. D. K Sharma, M. B Kore, Ajit A Bothara have been my inspiration throughout.

Challenges continue to motivate me, I would say this is just the beginning.

Q According to a study by Consulate General of Sweden in India, women are underrepresented in India's manufacturing sector with participation ranging from only three to 12%. Your views…

It is true. It has been observed that women are not truly aware of the opportunities in the manufacturing industries. We need to bridge this gap. Coming to why women are underrepresented, I would say one of the major reasons would be women are forced to quit their jobs or take leaves due to 'life stage needs' like maternity and child care.

I also feel there is a difference in pay scale when it comes to men and women. According to WageIndex Report 2015, male employees in the manufacturing sector earn INR 256.6 on average per day, while the women employees earn INR 179.8 per day. This amounts to a gender pay gap of 29.9 %.

Women also consider safety as the key parameter while choosing a job. The women of India Inc. expressed their reservations towards opting for night shift jobs with over 66.4% who consider it as unsafe. We should also focus on how many women are being properly educated to fit the industry and are allowed or willing to work in this industry. According to statistics, only 4.6% women hold senior positions in the manufacturing industry.

Q In 2012, Yamaha Motor India experimented with 'Pink Assembly Line' initiative in collaboration with Uttar Pradesh government to run an assembly line for scooters managed entirely by women workers. Do you think such initiatives can encourage women to be a part of the male dominated manufacturing industry?

Yes. It was a good initiative to encourage women. But I also feel that a change in a function will not change the mindset of the industry. Women employment should be driven across all functions. I do understand that this is a male dominated industry, but it needs to change. And the change should be driven from the ground level, be it in terms of education. Creating awareness about scope for women in manufacturing sector is also important.

Q What else can encourage women to actively be a part of this industry?

For more women to be a part of the workforce, it is essential to promote skill development. Skill development facilitates high productivity, increases employment opportunities and higher income.

Creating a more flexible work environment and identifying & increasing visibility of key leaders who serve as role models for employees can also help. Awareness about financial assistance, government support and creating awareness at the secondary school level will attract women to this sector.

Q Is the government doing enough for women entrepreneurs in this industry?

A recent report by International Trade Union Confederation (ITUC), highlighted that women are paid about 18% less than men doing the same work in the industry on an average.

Though the Government has taken a few steps to ensure that women are educated it has still not reached a place where everyone is informed about entrepreneurship and the countless opportunities it has to offer. I think it will take some time.

Q What encouraged you to be a part of this industry and how has your experience been till date?

Opportunities within the manufacturing sector are vast— it is not just a job, but a career with enormous potential. Working with high-technology equipment, being a part of an important industry, and adding value to the economy, all these factors encouraged me to take this plunge.

Q What were the challenges you faced initially and how did you overcome them? What are the challenges you face today?

Initially, the biggest challenge was capital investment required in machine tools and material. It was followed by competency, getting skilled manpower on board, maintaining the lead time and quality standards. We overcame these challenges by adopting advanced technologies. Godrej Tooling supported our firm in terms of trainings, changing the mindset and bringing in a similar culture as they possess. This has not just worked wonders on our morale, but also helped us in terms of knowledge and skill set. Coming to the present-day challenges, I would say qualitative changes, complexity with higher accuracies and demand for extremely thin delivery time top the list.

Q Your advice to women who want to enter the manufacturing landscape…

Don't be afraid to take risks- if you win you can lead, if you lose you can guide. You don't have to have it all figured before taking the first step towards your dreams. Trust your intuition, believe in yourself, and take advantage of the opportunities in front of you.

Be aggressive. Be confident.

Q Your role model…

Smt. Savitribai Phule is my role model and I take inspiration from the teachings of Swami Vivekananda.

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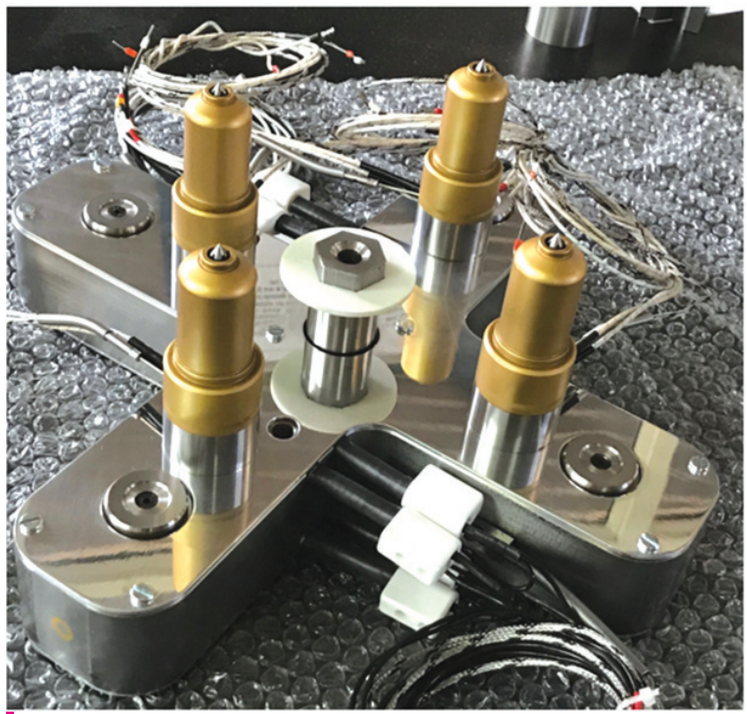
Hot Runner Technology Emerging in India

Bill Gates once said, "The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency." The improving of efficiency of a certain system or surrounding has always been the human tendency as people always want things to be better, to be faster, to be more efficient. Herein comes the importance of Hot Runner Technology.



4-Drop Hot Runner System - IGmould

Hot Runner Technology

A hot runner system is a molten plastic conveying unit, used within an injection mould; a hot runner system consists of heated components (generally via electricity) used inside the plastic injection moulds, which brings the molten plastic from the barrel of an injection moulding machine into the cavities of the mould.

The size and type of hot runner system used depends on many factors such as the type of resin used, shot weight, number of drop points and nature of part to be moulded and level of automation and intended saving of material, etc. The resin travels through the inlet, down into the manifold and then splits to the various nozzles and through injection points, or gates, into the final mold cavity where the final part will be formed. Today's moulds can have anywhere from 1 to over 256 nozzles.

Hot runner technology, introduced to the plastics industry worldwide over 50 years ago, revolutionized injection molding processing capabilities by improving moulded part quality, enhancing operational efficiencies, reducing scrap and saving money. This revolution fastened the world technology growth.

Prior to hot runner technology, cold runners were widely used on injection moulds. Cold runner moulds, although good at the time, faced many challenges in conveying the resin from machine barrel to cavities without affecting the flow and thermal characteristics of the resin. With the advancement of resin types and the complexity in mould and part designs, it became more and more difficult to control the moulding process via cold runner moulds to produce moulded parts of acceptable quality.

However, with the introduction of hot runner technology with advanced thermal controls, processing of wider ranges of resin became a more practical and convenient solution to injection molders. Unlike a cold runner mould, the hot runner components are individually heated to ensure the resin maintains the temperature continuously throughout the mould. The temperature of each hot runner heated component can also be precisely controlled to ensure the process is optimized to the requirements of each type of resin delivering to have the highest possible part quality. Today, hot runners are capable of producing highly complex parts in a wide range of weights and sizes which are utilized in every industry. The advantages of hot runner systems when compared to cold runner systems explains the reasons why people would prefer hot runner technology.

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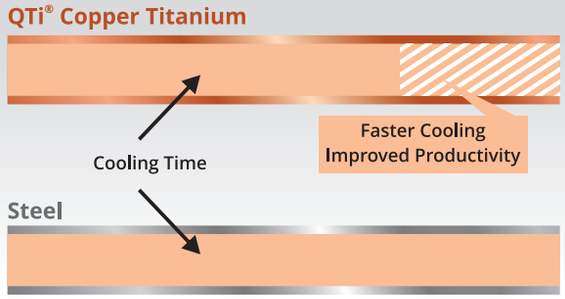

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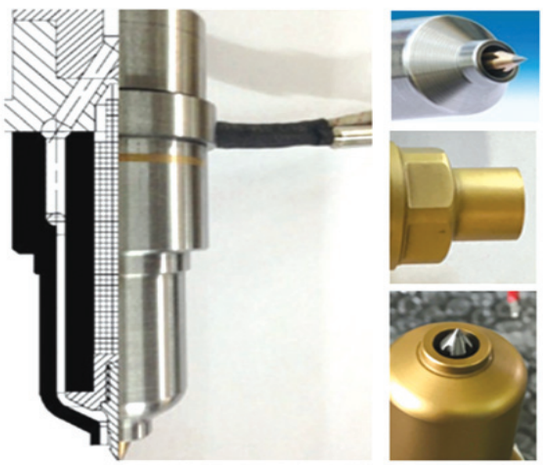
Merits of Hot Runner Technology

A big advantage of hot runner systems over cold runner systems is saving of material and reduction of cycle time. It is a given fact that the saving of material otherwise would have wasted in runners and reduction in cycle time plays an important role in lower product costs and increased efficiency of moulding and helps the automation. Because the cooling time dominates the cycle time and thickness of the wall of the solidifying cross section plays a major role in the calculation of cooling time. The cycle time can be reduced significantly by avoiding thicker sprue and runners in hot runner mould which usually have dominant cross section in cold runner mould.

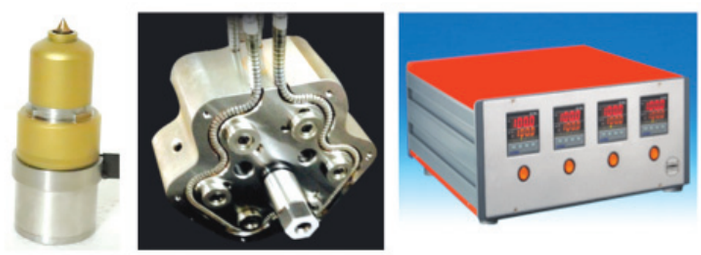
Reduction in the amount of raw materials used will directly lower the cost per item. Therefore, a hot runner application is recommended, especially with high performance plastics where runner wastage is high especially when the ratio of material wasted at runners as compared to the component weight is significant.

In cold runner mould, feeding the solidified gate back into the production process will also add to costs in production. Gate separation, regrinding, cleaning, transport, as well as feeding of the recycled material back into the injection moulding process requires machines and labours. For moulds with hot runner systems, these costs are nullified.

Some other advantages of hot runner systems are optimum gate location, permits to simplify the automation, less shot size and clamping load, higher production in less time, less pressure drop, balanced temperature control and controllable weld lines are notable.



Internally heated Nozzles- IGmould



Hot Sprue Nozzle, Manifold and Temperature Control -IGmould

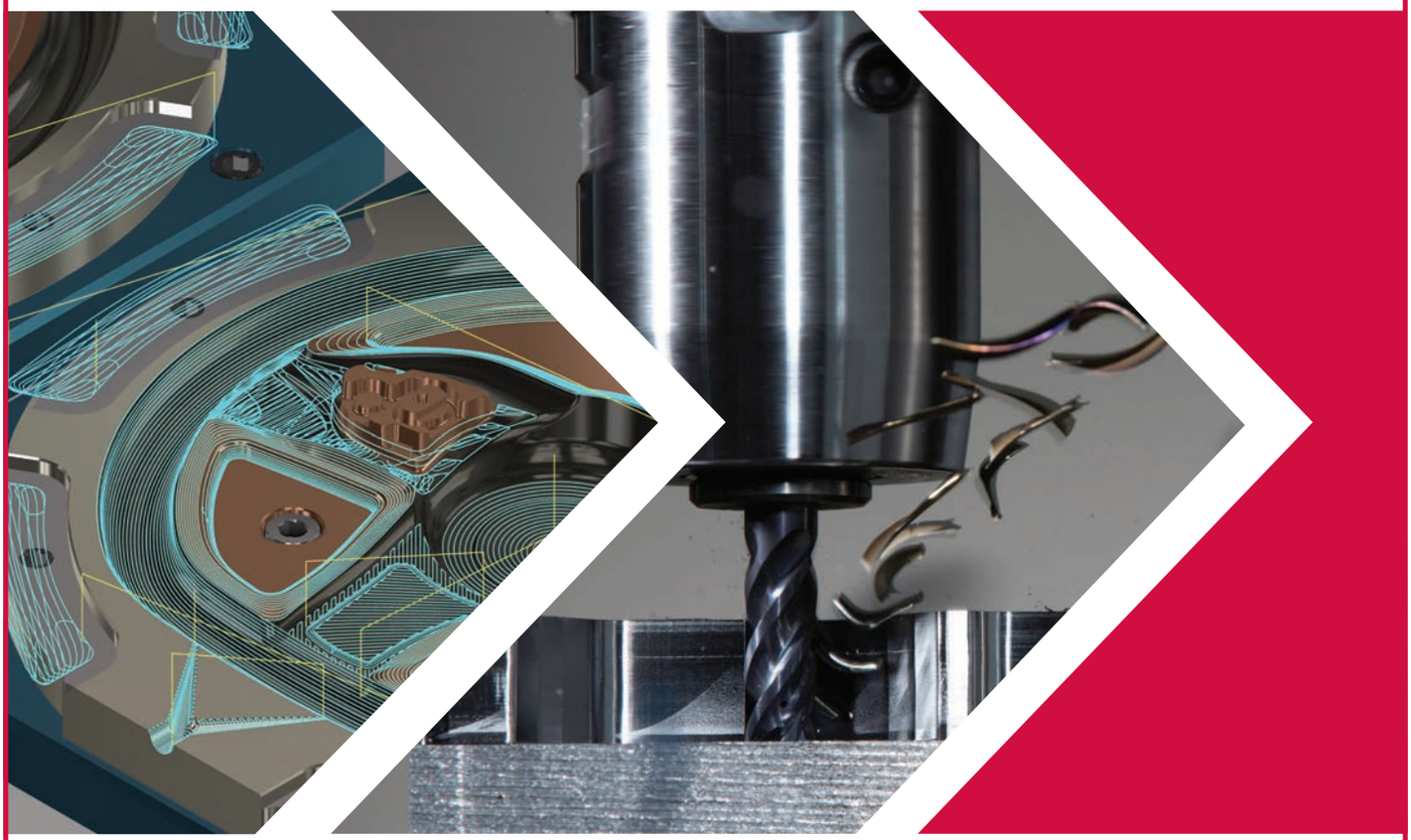
Options

Options of using hot runner system can vary from single hot sprues to multi drops, or even stack moulds. Hot runner system suppliers have the option to supply hot sprue nozzle of hot runner system or even a completely assembled hot half, which can be integrated with the cavity plates made by the mould maker. Also there are possibilities to retrofit Hot Runner Systems in exiting cold runner moulds, which is the rising trend in India as the systems are becoming more affordable due to the increasing local presence Hot Runner Manufactures in India.

Looking into the technicality of Hot Runner system we would know there are a few major parts to a hot runner system. First is the hot manifold which receives the material from the machine barrel and distributes it evenly to the drop points. Material flow path and turns of materials in the flow path are carefully designed so that we can have a balanced flow without the materials being sheared, clogged or trapped in the flow path. Flow analysis softwares helps to design the optimum layout, cross section and balanced flow path. The second element is the hot nozzle which carries the material from drop points of manifold to the required points in the cavity either directly to the component area or to the sub runners. Hot runner nozzles are the most critical part in the hot runner system. Nozzles are carefully designed to suit with the application,depending on the moulding material, type of gate, shot weight, etc. To cater to the specific application, hot runner system manufactures carry many varieties of hot nozzles.

The third element in the hot runner system is the hot runner temperature control which feeds and controls the electrical power to the various heating elements fitted on manifold and nozzle. There are systems with PID controls or with micro processor based controls which can controls many heating elements in the system, making sure that the temperature of the system is controlled within the set parameters, depending upon moulding material and type of application.

THE FUTURE STARTS HERE



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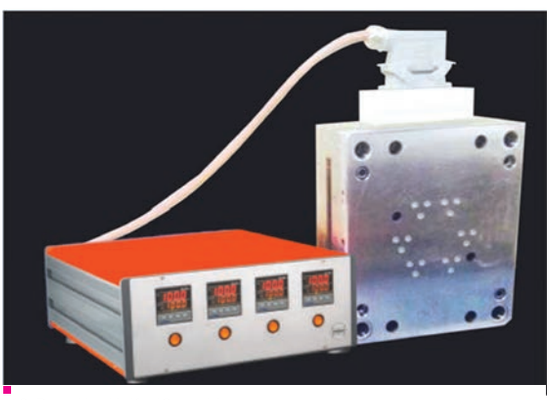
8-Drop Hot Runner System - IGmould

To heat the hot runner manifold, flexible heaters are used. Today they are flexible enough to bend and fit to the required profile on the manifold for equal distribution of heat. Multiple thermocouples are mounted at various points of the manifold to measure the temperature of the manifold and these send micro volt signals to the temperature control. To heat the hot runner nozzle, either externally mounted heaters or internally mounted heaters are used. The nozzles have very sensitive parts of the heating system—such as the thermocouple, heating coil, cartridge heaters etc.

Externally and Internally Heated System

In externally heated nozzles the heating elements are located on the outside of the nozzle body. As the coil is heated it expands, causing a gap between itself and the nozzle body so that it cannot touch the nozzle body uniformly. Because of this, the coil must be heated at a higher temperature to properly heat the plastic. This not only cause the risk of heating unevenly, but the higher temperature also means there is a risk of overheating and burning out the coil (heater failure). Also externally heated system transfer considerable amount of heat into the mould itself which could be a challenge for the cooling system of the mould.



18-Drop Hot Half - IGmould

This is not so with an internally heated nozzle. Because the insulation around the heating wire is solidly compacted to maximum density it eliminates any air voids around the resistance wire and surrounding nozzle bore. The heater inside the nozzle is an integral part of the body, so it resists burning out and contributes to more efficient heating. This is done as the heater element is able to run cooler due to the highly dense insulator, which carries away heat produced on the surface of the resistance wire when the heater is energized. So not only does it run more efficiently, it also helps prolong the heater life.

Another notable benefit of internally heated nozzles is the location of the thermocouple. The thermocouple and the heating element are located much closer to the gate, at the end of the nozzle, so they deliver heat at a very precise temperature. The result is a better heat profile and more controlled melt temperature and, therefore, better molded part quality.

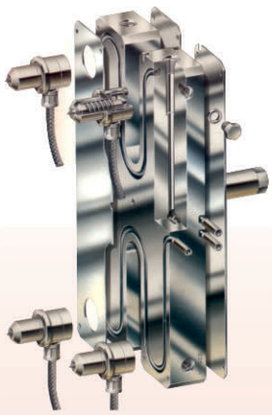
Granted, if the heating coil on an externally heated nozzle burns out, it can conveniently be replaced without removing the mold from the press—as long as no leaking has occurred. This is not possible with an internally heated nozzle, but it's clear the benefits outweigh the slim chance of the heating element burning out and, like other systems, nozzle tips are replaceable at the molding machine.

Although internally heated nozzles have these advantages, they are not as widely used as they are expensive and are mostly imported. The real innovation for internally heated nozzles in India has come from companies like IGmould Technologies in Bangalore, India, where they provide high German Quality nozzles with wide verity of type and size to suit exactly to the application but sold at Indian prices, thereby promoting the use of internally heated Nozzles for more efficient production in India.

As the Indian plastic industry grows on a daily basis, it is truly encouraging to see such technologies emerging on the local market, accessible to more and more people. The future of Indian Plastic products look very promising.

About Author:

Sonichen.P.V, (MIE,MBA(UK),MFT)
Managining Director.
IGmould Technologies Pvt Ltd



IGmould is a German Joint venture company, producing world class Hot runner products from the silicon valley of India, and sold at Indian Prices.

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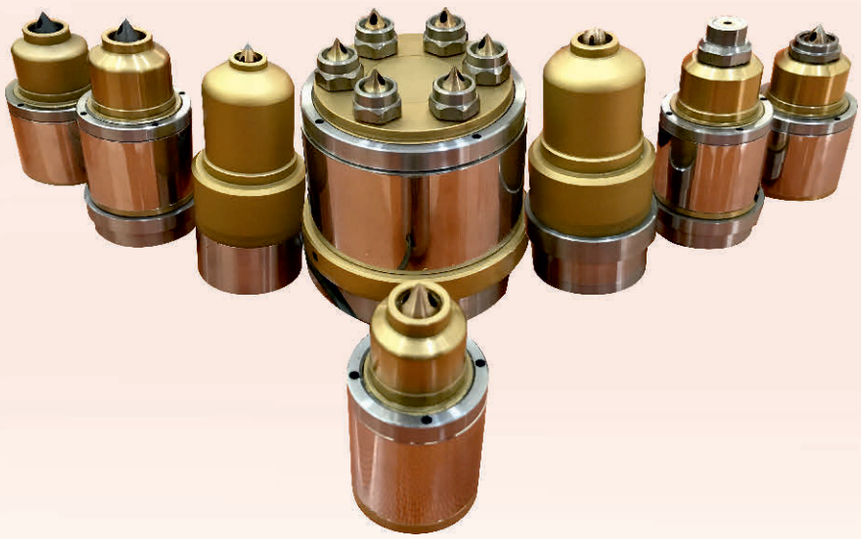
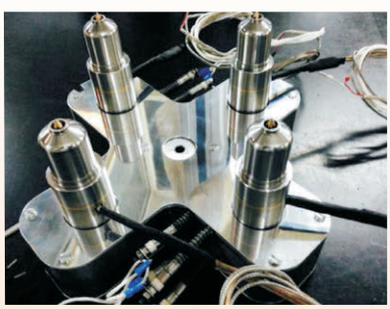


IGmould's Internally heated Nozzles heat the Plastic first, not the mould, hence helping in better mould cooling, cycle time and power efficiency.

Hot Runner Technology



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With ever increasing demand from industries such as automotive, consumer goods, home appliances, plastics & packaging along with new entrants such as aerospace and medical, the future of Indian die mould industry looks very promising. We have featured three industry leaders to get their views on the current trend in the industry. Read on…

Ravi Sane,
Country Head, Dijet India

Q Your views about the Indian die mould industry?
The Indian die and mould industry is growing rapidly. End-users are trying to adapt the latest trends to manufacture or produce them locally and manufacturers are doing their best to achieve the high quality die and moulds matching global standards. There is always limitation for good machines and dedicated manpower, the input cost is also huge limitation.

This industry is growing in India, thanks to the demand from industries like automotive, packaging, electronics appliances and home appliances. In the days to come this demand will witness an increase leading to rise in demand for die and mould manufacturers. The demand at present is also higher than supplies, so India is dependent on imported tooling.

Q Top trends in the industry…
The Indian die and mould industry is getting matured and growing by almost 15 to 20% every year. Manufacturing complex moulds is not a challenge anymore for several die and mould manufacturers in India. Other trends include automotive manufacturers trying to reduce the weight of the vehicles by using plastic parts, also with the advent of electric cars more number of plastic parts will be used increasing the demand.

Q Various challenges faced by the industry…
Lack of skilled manpower and finance are the major hurdles. I also feel, government policies like import duty on machine tools and cutting tools should be reduced. Government should have special focus on this industry, growth of this industry will automatically have positive impacts on other industries like home appliances, electronics appliances and automotive.

Q How do you see the future of Indian tooling industry?
This industry will grow as the economy of India is growing,

Tushar Pawar,
Director,
AMPCO METAL India Pvt Ltd

Q Tell us about your company…
AMPCO METAL India Pvt Ltd. is the Indian arm of Switzerland based AMPCO METAL S.A., a leading international manufacturers and integrated distributors of speciality copper alloys and engineered products.

Q Your views about the Indian die mould industry…
The die and mould industry in India has evolved over the years and today competes in a global arena. With an increasing demand from industries such as automobiles, auto components, packaging, plastics, electronics, electrical, healthcare and machine tools, we see a huge opportunity in the industry in India.

Q Various challenges faced by the industry…
There are still huge amount of imports in this industry. Competition from China and Korea happens to be the biggest challenge in this industry along with the lead times.

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Our industry needs to focus on efficient design, machines, manufacturing process & management systems, ensuring best quality and timely deliveries.

Q The future of Indian tooling industry…

The die and mould/tooling industry in India has evolved over the years and is currently enjoying a significant position in the global manufacturing scenario, keeping its pace with the time and redefining quality and precision. It is definitely capable of 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 has plenty of opportunities.

Marc Weinmann,
VEM Tooling (India) Pvt Ltd.
Group Owner

Q Please tell us about your company…

VEM Tooling (I) Pvt ltd was incorporated in 2016 and started operations in January 2017. It is 100% owned by Marc Weinmann. He started tool development in Shenzhen (China) in 2001 and later at Rayong, Thailand in 2008. Presently, VEM India has 90 employees and has successfully developed 100 tools in the first year. Main focus is to develop tools from smallest 50T to 650T molding machine size. VEM caters to automotive, packing, electrical & electronic and medical industry.

Q Your views about the Indian die mould industry…

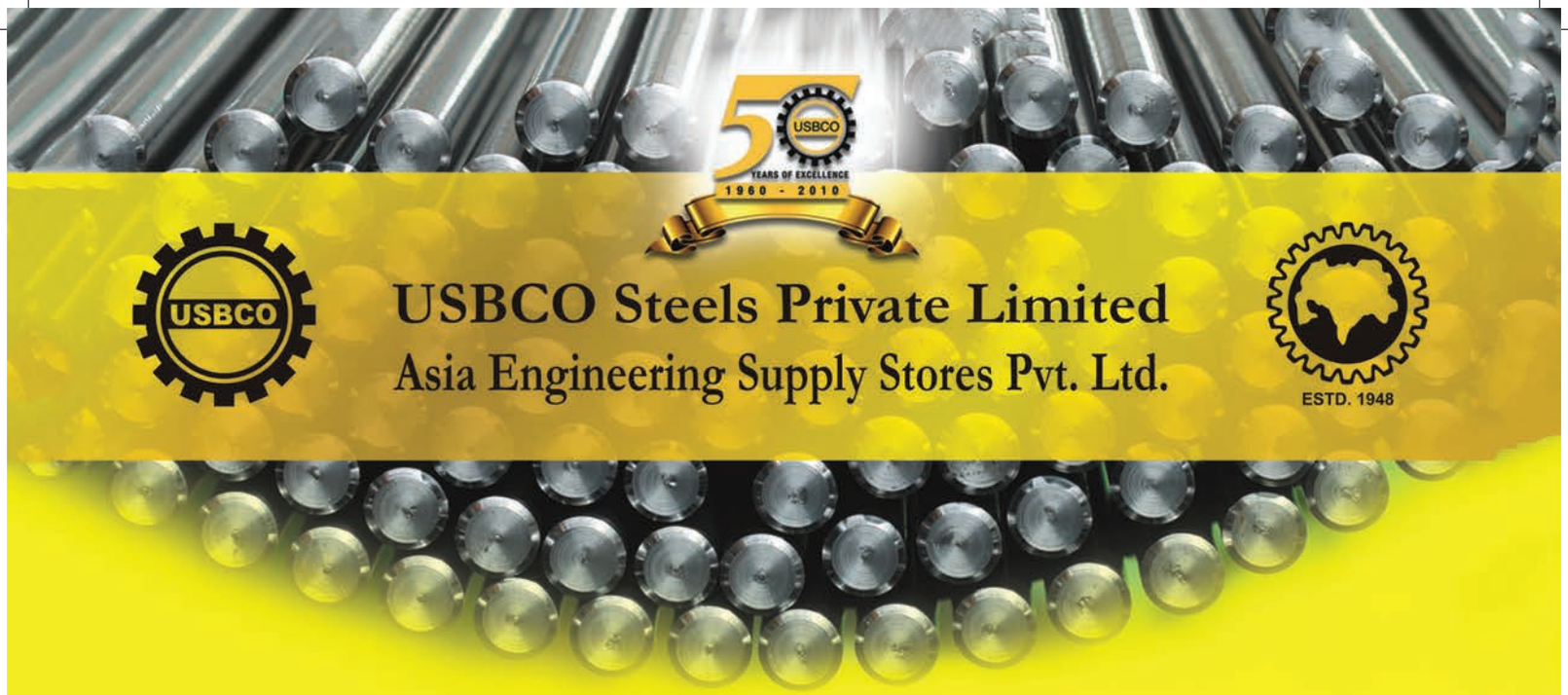
The industry has a long way to go. At the moment it is un-organised and driven mainly by single owners with limited infrastructure. Due to adequate funding the risk capability in this industry is limited and hence, most of the time customers are forced to source tool out of India. Steel material supplies base is good and is at reasonable prices but skilled manpower remains to be a key issue. Organisations like NTTF, TAGMA needs to focus more on skill development programs.

Q Top trends you observe in the industry…

At present the global trends indicates that industry (OEMs) is looking for more of local source than global sourcing. It is good sign for the Indian tooling industry where due to several limitations customers are sourcing tools out of India. Also, with trade war between powerful countries India is looked at potential source for winning part of global share but as mentioned above there are several issues like capital investment, high interest cost, employee skill, etc which needs to be addressed overcome.

Q Future of Indian tooling industry…

There is huge demand from customers and the demand trend will remain the same for another 7 to 10 years. But if we address all the issues and get over the challenges, the Indian tool industry will not only grow for local businesses but they will get a good share of global business.



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TAGMA organises AGM in Bengaluru

TAGMA recently organised the Annual General Meeting (AGM) in Bengaluru. Held on September 19 at Taj Vivanta, the event was attended by over 50 member companies along with TAGMA President Mr DK Sharma, and Council Members such as D M Sheregar, Gopalakrishnan T S, Parveen Satija, Paresh Panchal and Sree Prakash R. The Chief Guest for the event was Mr N Reguraj, Managing Director, NTTF and Founder President of TAGMA.

In his welcome note Sharma spoke about the current trends in the Indian tooling industry and encouraged audience to collaborate with each other in order to become strong die mould nation. "We have to set new goals for the next few decades as we see the new industrial and manufacturing world developing around, creating new opportunities in the domestic turf as well as in the global arena. We are fortunate to be existing in an era where the Indian economy is witnessing the fastest growth in the world. I urge TAGMA members to provide suggestions on what more could be done to address the needs of tool making fraternity and make ourselves more efficient and competitive," said Sharma.

In his speech Reguraj recalled his earlier days and the challenges all the founding members faced. "I am delighted to say that after crossing all the hurdles, TAGMA has become a truly national association and has become the voice of the Indian tooling industry.

The event concluded with information about the upcoming mega seminar International Tooling Summit 2019 scheduled to take place in Pune on February 7-8.

Hurco's footprint in India continues to expand with the grand opening of a new technology center in Chennai

HURCO Companies Inc. USA has set up its new technology centre at Chennai in India. The new technology centre will give customers the easy access to advance metalworking technology of Hurco with applications support and training.

The new technology center & office was inaugurated by Mr. Himat Patel, Sr. Vice President Hurco Companies Inc USA in presence of eminent industry professionals.

Mr. James Fluker, Commercial Consul, US Commercial Service, Mr .Hetal Mehta, Chairman SETU foundation Surat, Mr. D. Ravi, Managing Director, Classic Moulds Chennai, Mr.Malkit Singh Panesar, Managing Director, Panesar Agriculture Works , Ludhiana were guest of honour for the program.

Hurco provides High Precision 5 axis Machine, 3 Axis Vertical Machining Center, Double Column Machining Centres, Horizontal Machining Center, Turning & Turn Mill center. Hurco has unique, innovative software and CNC controls that help customers to maximise productivity through reduced set-up time and multi-tasking on the shop floor.

Around 150 customers from all over India witnessed the grand opening of technology center & participated in 50 years celebration of Hurco. The company also has technical centres in Coimbatore and Pune and regional offices in Delhi and Bangaluru.

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The Return on Investment

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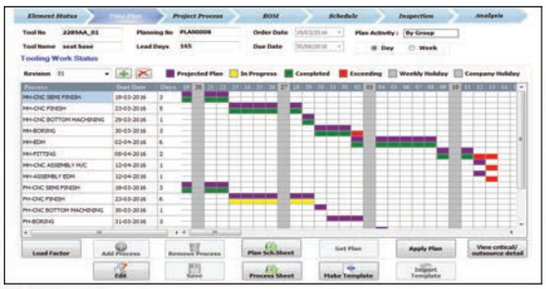
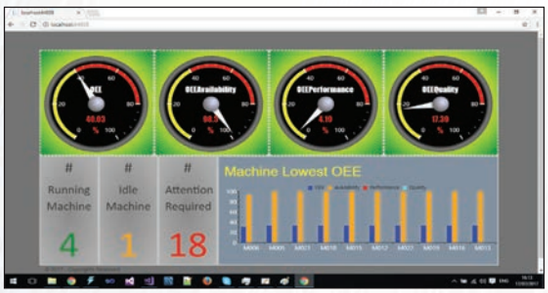
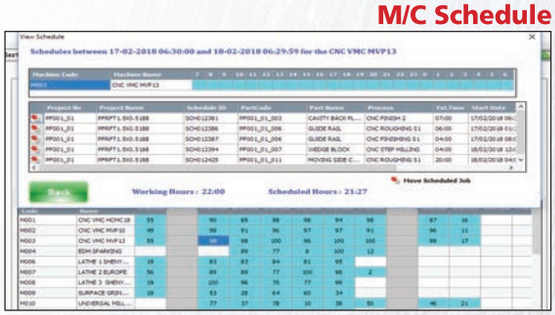


Project Dashboard

OEE



M/C Schedule



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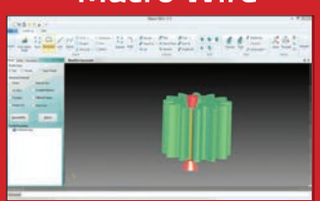

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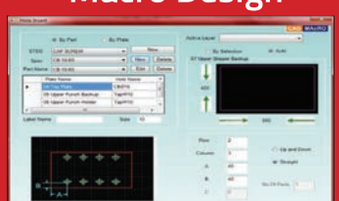
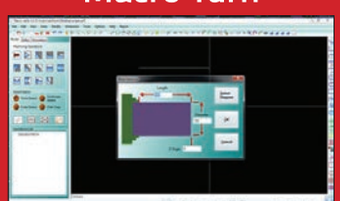
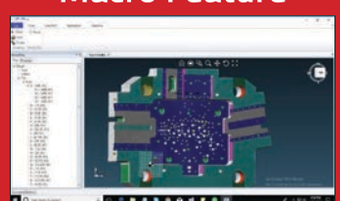


Macro Turn



Macro Feature



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Prime Industries organises multi-city EDM Productivity Forum

INDIA'S leading machined graphite product supplier, Prime Industries organised the third consecutive EPF - EDM Productivity Forum recently. It event was held in Mumbai, Pune and Aurangabad on September 8, 10 and 11 respectively with joint participation of leading OEMs and TAGMA. The EPF seminar was first launched in 2015.

The event aimed to promote excellence and sharing of best practices in die-sinking EDM machining & tooling industry. It was attended by over 50 tooling professionals in each location. The Mumbai event started with a welcome note and company presentation by Prime Industries executives. It was followed by a presentation by global EDM expertise Mr. Stephen Harris - Director of EDM Sales & Technical at MWI, Inc., USA on

global trends in the tooling industry.

The presentation was followed by a power packed panel discussion on 'Challenges and Solutions in the SME Tooling industry". The panel was moderated by Ashish Chandra Varma, Managing Partner, Prime Industries and panellist included Mr DK Sharma, President, TAGMA, Mr Guruprasad Puranmath, Head - Tool Room Division, Mutual Industries and Stephen Harris in Mumbai &

different panel members in Pune & Aurangabad.

All the panellist unanimously agreed for better industry-academia partnership. Many of customers across the three cities stated that EPF was a platform to learn and network and requested for more such periodical seminars in to share about new technologies & knowledge beneficial to the tooling industry.

The main agenda of EPF Seminar was:

- To promote excellence in tooling industry.
- Providing a platform for sharing knowledge, experience and best practices in the tooling industry.
- Presenting case studies and success stories for promoting new and advanced machining technologies through EDM handbook.
- Inviting industry experts to present seminars, panel discussions and case studies related to EDM & tooling Industry.
- Promoting demo days and technical seminars with leading EDM OEMs.

Increasing your competitiveness with Copper Alloys

IN the field of plastic injection molds, producers are very careful when it is time to decide which basic material should be used for their molds. Up to now, some companies still use conventional tool steels, but if this material is less expensive for the buyers' side, it still presents a lot of inconveniences compared to high conductivity copper alloys.

A high conductivity copper alloy is – within the context of this article – a copper based material that through a combination of alloying and manufacturing techniques, retains the higher thermal conductivity that is inherent in copper, but with a degree of hardness that allows it to be used in the machined condition within a production environment.

The Switzerland based company AMPCO METAL, who celebrates its 104th birthday this year, is specialized in copper alloys and is recognized worldwide for copper alloys, so-called AMPCOLOY® , and is largely used in plastic injection applications. But what are the real benefits whilst using copper alloys?

Mr. Luis J. Bento, Chairman of AMPCO METAL, explains: "Cycle time can be reduced by at least 20 percent, and some users report reductions of up to 80 percent, resulting from the significantly faster cooling rates achieved with AMPCOLOY® alloys. This means that productivity can be increased by at least 25 percent, with some users in the automobile headlight production industry reporting up to a 500 percent production increase simply because a reduced cycle time means more components can be made per shift."

But gains in productivity can not only be also achieved due to their conductivity.

The excellent polishing ability of AMPCOLOY® alloys has been proven when used in contact lens packaging manufacture, which requires the packaging to be transparent so the lenses can be checked through the packaging. Such high quality plastic packaging is achieved with high conductivity copper alloy inserts that are highly polished. The polishing time of such inserts has proven to be four times faster than steel inserts, and the cycle time to be reduced by 57 percent.

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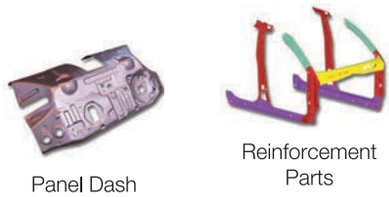
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TAGMA TECHNOLOGY CENTRE

TAGMA INDIA announced opening of its Tool Trial Centre at Chakan, Pune from June 2014 for Members and the Tooling Industry.

The centre has two injection moulding machines i.e. Maxima Servo 500 and Maxima Servo 850 alongwith related ancillaries.

(i) Maxima Servo 500 :-

• Injection capacity=1719 Gm • Injection pressure = 1918 Bar • Injection rate=445 CC/Sec • Injection screw stroke=360 MM • Screw diameter=80 MM • Screw speed=180 RPM • Screw torque@172 bar=4369 NM • Clamp stroke=1475 MM • Maximum Daylight = 1725 MM • Minimum mould thickness = 250 MM • Maximum mould thickness = 1000MM • Platen size(H×V)=1250×1250 MM • Distance between Tie rods • (H×V)=920×920MM • Tie rod diameter=145 MM • Ejector stroke=250 MM • Ejector force=11.7 Tons • Maximum mould weight=7.5 Tons. • Air Ejection 2 Stage • Hydraulic Core Pull 3 Stage • Hydraulic Mould Gate Valve 4 Stage • Pneumatic Mould Gate Valve 4 Stage

(ii) Maxima Servo 850 :-

• Injection capacity=3288 Gm • Injection pressure=1896 Bar • Injection rate=585 CC/Sec • Injection screw stroke=440 MM • Screw diameter=100 MM • Screw speed=160 RPM • Screw torque@172 bar=6550 NM • Clamp stroke=1850 MM • Maximum Daylight=2250MM • Minimum mould thickness=400 MM • Maximum mould thickness = 1200MM • Platen size(H×V)=1790×1470 MM • Distance between Tie rods (H×V)=1390×1070 MM • Tie rod diameter=195MM • Ejector stroke=250 MM • Ejector force=18.2 Tons • Maximum mould weight=17.2 Tons • Air Ejection 2 Stage • Hydraulic Core Pull 3 Stage • Hydraulic Mould Gate Valve 8 Stage • Pneumatic Mould Gate Valve 8 Stage

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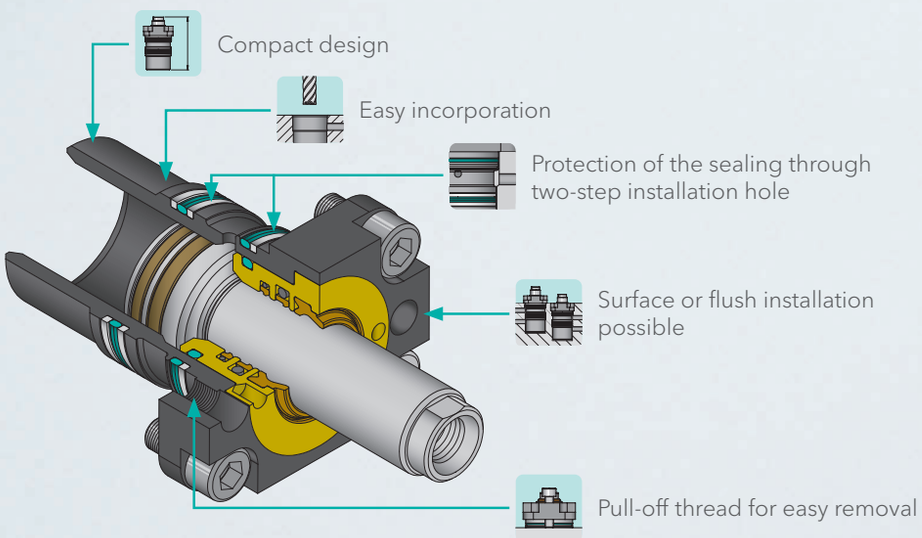

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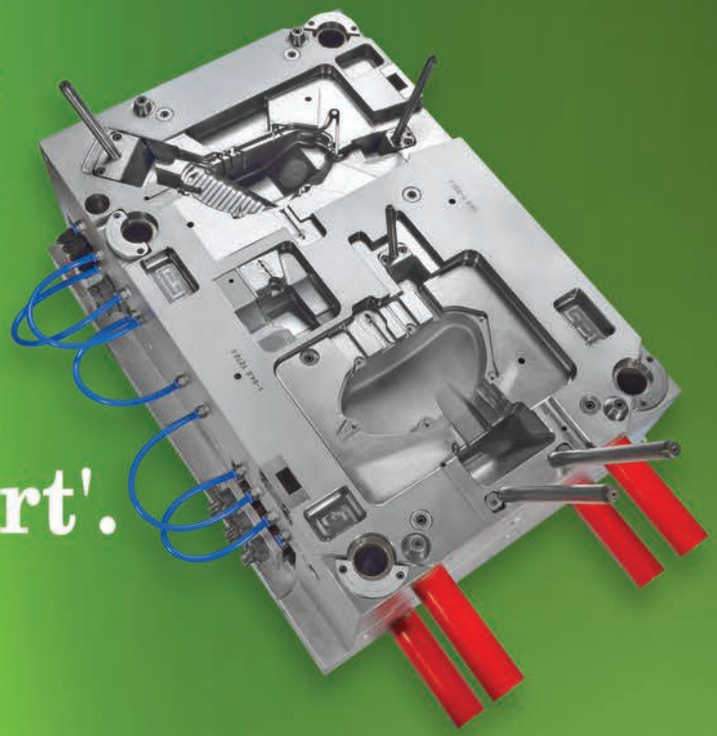

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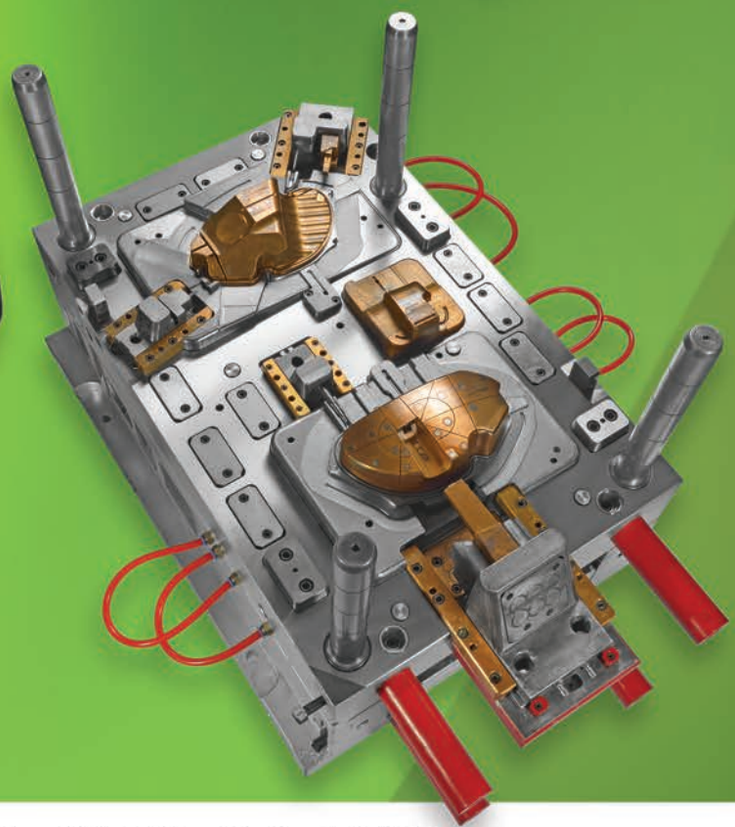

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