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Indian Machine Tool Manufacturers' Association
www.imtma.in

Indian Machine Tool Manufacturers' Association

www.imtma.in

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EXECUTIVE COMMITTEE 2013-2014

President

Mr. L. Krishnan
Managing Director
TeaguTec India Private Limited

Vice President

Mr. P. G. Jadeja
Managing Director
Jyoti CNC Automation Limited

Members

Mr. P. Ramadas
Managing Director
Ace Manufacturing Systems Limited

Mr. Milind B. Kulkarni
Chief Executive Officer -
Machine Tool Group
Batliboi Limited
(Moved out from Batliboi w.e.f. February 2014)

Mr. Syed Amjed
Senior Vice President - Marketing
Bharat Fritz Werner Limited

Mr. N. Umesh
Vice President
Bosch Limited
(Relocated as Managing Director of Bosch Chassis Systems India Ltd., Pune w.e.f. January 2014)

Ms. Sonali Kulkarni
President & CEO
Fanuc India Private Limited

Mr. M. D. Sreekumar
Managing Director
HMT Machine Tools Limited
(Moved out from HMT Machine Tools w.e. from February 2014)

Mr. B. C. Rao
Managing Director
Kennametal India Limited

Mr. Rupesh J. Mehta
Managing Director
Macpower CNC Machines Private Limited

Mr. Satish Godbole
Vice President - Motion Control Systems
Siemens Limited

Mr. Indradev Babu
Managing Director
UCAM Private Limited

Co-opted Member

Mr. Achal Nath
Executive Director
Ashok Manufacturing Company Private Limited

Past Presidents

Mr. Vikram Sirur
Miven Machine Tools Limited

Mr. M. Lokeswara Rao
Lokesh Machines Limited

Mr. N. K. Dhand
Micromatic Grinding Technologies Limited

Mr. C. P. Rangachar
Yuken India Limited

Mr. V. S. Goindi
Parishudh Machines Private Limited

Mr. Shrinivas G. Shirgurkar
Ace Designers Limited

Mr. Bir D. Singh
Voltas Limited *

Mr. C. R. Swaminathan
PSG Industrial Institutions *

Mr. Shailesh Sheth
Simtools Limited *

Mr. S. N. Mishra
Bharat Fritz Werner Limited *

Mr. Nirmal Bhogilal
Batliboi Limited

Mr. Jamshyd N. Godrej
Godrej & Boyce Manufacturing Company Limited

Mr. G. A. R. Shaikh
Voltas Limited *

Mr. Jayant H. Shah
Batala Engineering *

(* Companies represented by Past Presidents during their tenure of Presidency)

Invitees

Mr. S. Sukhdial Singh
President
Association of Ludhiana Machine Tool Industries

Mr. Aditya Ratnaparkhi
Deputy Chairman - UDAAN &
General Manager - Operations
Electronica Mechatronic Systems India Private Limited

Mr. N. K. Balgi
Director
Ferromatik Milacron India Private Limited

Mr. Shailesh D. Kawa
President
Machine Tools Manufacturers Association (MTMA) Rajkot

Mr. T. K. Ramesh
Chief Executive Officer
Micromatic Machine Tools Private Limited

Mr. D. S. Totre
Vice President - Machine Division
Premier Limited

Mr. Rajendra S. Rajamane
Chairman - UDAAN &
Managing Director
Rajamane Industries Private Limited

Mr. Rajesh G. Khatri
Executive Director & CEO
TAL Manufacturing Solutions Limited

Secretary and Director General

Mr. V. Anbu

A BIG PUSH FOR 'MAKE IN INDIA'

It has been heartening to note the huge amount of thrust on manufacturing, and the fresh spurt of energy emanating from across industrial segments. With the clarion call of 'Make in India' given by the Prime Minister from the Red Fort - the impetus is expected to be on manufacturing.

We started the year with modest to low sentiments about business conditions and opportunities. In the year 2013, industrial slowdown of yesteryears, inflation worries, dip in exports and imports, fall in employment opportunities had come to stay and had been accepted as the new normal by the industry. But there has been marked improvement in terms of focus and activity levels of late. What is reassuring is that it is not just talk – there is palpable spurt in industrial production levels. Repeated interactions with customers suggest the investment cycles have started and it definitely augurs well for the machine tool industry.

With considerable governmental and policy interventions, demand began to regenerate and the year 2013 closed with a 4.7* per cent GDP growth; a marginally positive industrial growth at 0.4 per cent; and no significant improvement in manufacturing turnover which remained at negative 0.7 per cent.

Industrial production just about managed to remain in the positive territory, indicating an upturn in the business cycle. Clearly, this was an aberrative year and we expect a pick-up in industrial production, going forward, as downside risks are gradually receding on account of anticipated global recovery and policy reforms by the government. We are optimistic and confident that the future is bright; both manufacturing volumes and consumptions in the country are set to increase multifold in the times to come.

A matter of concern however is that India is currently ranked eleventh, significantly lower than last year's rank of sixth in the global machine tool consuming market; it has dropped from eleventh to 16th position of the world's machine tool manufacturing nations. For the Indian machine tool industry, the closing months saw an encouraging improvement in orders and leads, which had virtually evaporated in the first few quarters of 2013-2014 fiscal year. Indigenous machine tool turnover declined by 10 per cent as the market grew at a sluggish pace - making it difficult as usual to meet the challenges of stiff competition. India's global ranking is based on the machine tool data provided by the Association to the global compiling agency. If the membership comes out in full strength to share information about their individual organisation's turnover, we will be in a position to showcase our 'real' potential.

GOVERNMENT ADVOCACY

Be that as it may, your Association has been proactive in its endeavour to highlight the key issues faced by the Indian machine tool industry in the current competitive environment. We feel assured by the government's special importance to this industry in enhancing workforce skills through the setting up of the Capital Goods Skills Council.

Besides, we are making concerted efforts to drive home the strategic importance of the machine tool industry amongst all levels of policy-making institutions. These also include interactions at the highest levels of National Manufacturing Competitiveness Council (NMCC) and the Planning Commission of India. We expect GOVERNMENT ADVOCACY to see positive developments at various policy level initiations, including IMTIP - the Integrated Machine Tool Park, over this financial year.

ASSOCIATION INITIATIVES

IMTMA has recently opted for and obtained Integrated Management System (IMS) certification. The certification covers key activities of IMTMA including Trade Fairs and more importantly, Bangalore International Exhibition Centre. IMS certification reaffirms IMTMA's commitment to environment, health & safety aspects to ensure enhanced customer experience as well as assuring safety of individuals.

Your Association has taken a lead in organising an array of programmes and events - designed to benefit the membership at large and in particular the customers of machine tool manufacturers. The last one year has been a witness to large mega events as the Productivity Summit, Machine Tool Industry Summit and the International Seminar on Forming Technologies.

A large volume of technical training programmes on all aspects of technology, quality and productivity have been organised across Bangalore, Pune and Gurgaon.

IMTMA Technology Centre at Pune has commenced training from May this year and next on cards will be the Technology Centre in North as we need to focus on increasing the Association's training and skill development activities in the region.

Your Association has revitalised the Design Institute at IMTMA Technology Centre in Bangalore and has successfully launched six new Machine Tool Design oriented programmes to enhance skillsets of both, existing workforce and freshers to

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FOREWORD

create a pool of trained engineers available to machine tool industry.

We happened to close the year with the 3rd metal forming technology exhibition - IMTEX FORMING 2014 along with Tooltech 2014. The response to this focused exhibition was truly gratifying and we expect to have a much larger participation in IMTEX FORMING 2016.

Continued focus on the three Regional Councils of IMTMA - in the North, West and South resulted in growth of Association's activities in the regions.

The other forum of the Association – "UDAAN" has shown results including the 'JAGRUTI - IMTMA Youth Programme'. IMTMA and the Executive Committee in particular have lot of expectations from the "UDAAN" group.

IMTMA has also announced two exhibitions - 'Delhi Machine Tool Expo 2015', proposed to be held in Delhi between August 20-23, 2015, at Pragati Maidan and 'Ahmedabad Machine Tool Expo 2015' proposed to be held between September 24-27, 2015 at Mahatma Mandir, Gandhinagar.

BIEC

BIEC is today recognised as a state-of-the-art venue for organising trade fairs and international quality conventions and conferences. It was able to attract and host some of the largest exhibitions and trade-shows in the year 2013-2014 including ELECRAMA and EXCON.

It is a matter of immense satisfaction that BIEC has been able to host 26 major trade fairs and mega-events spanning over 145 days of exhibition.

BIEC is today an active member of several global exhibition industry associations - and has been successful in being visible to world's biggest trade show organisers who are turning to Bangalore International Exhibition Centre to hold larger and better shows. BIEC was host to India's first 'UFI' Open Seminar in Asia in March 2014.

FUTURE THRUST

While the Indian economy shows signs of bouncing back, manufacturing sector seemingly poised for a turnaround, there are causes of concern for the machine tool industry. We have to address capacity expansion, rapidly changing technologies, strengthen manpower talent and beyond all, focus on innovation and productivity. These are the factors that will propel us to realize our VISION of having a dominant domestic market presence, besides being a meaningful international player.

Towards this objective, your Association has derived a Business Excellence Roadmap for the Indian Machine Tool Industry with help of seasoned veterans and mentors. This project is essentially aimed at enabling machine tool companies to be competitive and aspire to become world class. We expect the membership and the industry to benefit from the Business Excellence project.

I am excited to share that a joint study has been launched by your association and ACMA to understand and address concerns related to the capability and capacity of the machine tool sector, bringing important insights to Indian machine tool industry to cater to future needs of the auto component sector, the biggest consumer of machine tools today.

FELICITATION

2013-2014, for me, was a year of reckoning as I took the office of Presidency. I share the achievements of our Association over the last one year with the entire membership, and in particular with my colleagues in the Executive Committee. I am certain to get renewed support from all quarters in future as well, especially in carrying out the tasks outlined for the Association in the year ahead.

L. Krishnan
President

* As per second revised estimate, Ministry of Finance, Department of Economic Affairs, June 2014.

67th ANNUAL SESSION OF IMTMA

6 September 2013 : BIEC, Bangalore

The 67th Annual Session of Indian Machine Tool Manufacturer's Association (IMTMA) was held on 6 September 2013, at the Conference Centre at Bangalore International Exhibition Centre (BIEC), Bangalore.

Delivering his annual address, President - IMTMA, Mr. Vikram Sirur briefly spoke about the economic downtrend and expressed hope for an improved situation in near future. He pointed out positive signs visible in the quarterly results of some of the companies in the manufacturing sector.

Mr. Sirur went on to share the global outlook on India's Growth Story and how the Japanese machine tool industry identified India as its top three destinations over next five years. Another positive indicator identified by him was the special seminar titled "EMO focus on India" organized by the German machine tool association at Hannover in 2013.

While acknowledging the supportive role of the Government of India and the Government of Karnataka, Mr. Sirur also praised the role of Department of Heavy Industry in supporting the Capital Goods industry in India. He mentioned about DHI's proposal to set up 'Centre of Excellence' devoted to R&D and technology development in the field of machine tools and production technology at IIT Madras as a part of an overarching scheme titled "Enhancement of Global Competitiveness in the Capital Goods Sector".

Mr. Sirur exclaimed about 'Made in India' brand getting its rightful recognition and interactions with the Ministry of Commerce, Government of India, India Brand Equity Foundation (IBEF) and Engineering Export Promotion Council (EPCC) on export promotion for Machine Tool Sector.

Mr. Sirur spoke about the Association's Vision 2020 for the Machine Tool industry to be amongst the top 5 machine tool building nations by the year 2020.

67th ANNUAL SESSION OF IMTMA

Touching upon various significant initiatives for 2012-2013, Mr. Sirur mentioned 'Vision deployment' across member organizations and IMTMA's plan to roll out a 'Business Excellence Programme' for Machine Tool industry through Cluster approach.

Mr. Sirur re-emphasized IMTMA's commitment to skill enhancement by being an integral part of the "Capital Goods Sector Skills Council" and announced the re-launch of 'IMTMA Design Institute' to train designers for the industry.

Focusing on other key future initiatives of the Association, he spoke about Market Forecasting and Technology Forecasting study for machine tools with short term as well as long term focus. Mr. Sirur also reiterated the importance of closer networking with members - through the Regional Councils; "UDAAN" as well as frequent visits by Secretariat to member premises.

Mr. Sirur called upon the membership and the industry to continue to provide proactive support and guidance as well as to actively participate in the Association's activities.

Mr. Sirur informed the gathering that "IMTMA - Naoroji Pirojsha Godrej International Exhibition and Conference

International Exhibition and Conference Complex" has gained its rightful recognition of being India's apex venue for b2b industrial trade fairs as well as international-level conventions and conferences.

He then thanked the membership, Past Presidents, Executive Committee and Secretariat for providing assistance, guidance and support in all major endeavours of the Association.

Mr. Sirur then took up the statutory agenda and the special business of the association which was unanimously apporved by a voice vote.

Concluding his last address as President of IMTMA, Mr. Sirur congratulated the newly-elected Executive Committee of the Association.

The Annual Session of IMTMA concluded with a vote of thanks to the office-bearers of the Association.

IMTEX FORMING 2014 & TOOLTECH 2014

IMTEX FORMING 2014
International Forming Technology Exhibition

Tooltech 2014
International Exhibition of Dies & Moulds, Forming Tools, Machine Accessories, Metrology and CAD / CAM

23 - 28 January 2014, BIEC

Stepping into the 45th year of celebration, 'IMTEX FORMING 2014' – the International show on forming technology and 'Tooltech 2014' - International exhibition of Dies & Moulds, Forming tools, Machine accessories, Metrology & CAD/CAM were held at Bangalore International Exhibition Centre from 23 - 28 January 2014.

The wide display of technological manifestations elevated the bar of expectations and strengthened the competitiveness of India to be considered among the most preferred destinations for joint ventures, investments and other business proposals.

The exhibition catered to 440 exhibitors who displayed 500 machines tools in an exhibition area of 30,000 sqmts in three large halls. The participation, apart from India, came from 24 countries including 4 group participations from China, Germany, Czech Republic and Taiwan. The show was visited by close to 45,000 visitors during the 6 days event at BIEC.

The event not only catered to the business needs of national and international exhibitors but also honoured the veterans of the industry.

With the latest and high grade innovations displayed in the halls, the show was a

visual treat to the young engineers visiting the venue as part of the students' initiative of IMTMA.

Once brought under one roof, the industry spurted into a virtual setup for business dealing, joint ventures and new product launches.

The exclusive forming exhibition was inaugurated on 23rd January, 2014 by lighting the ceremonial lamp in the presence of Mr. Vikram Kirloskar, President, SIAM; Mr. Jamshyd N. Godrej, Chairman Exhibitions, BIEC; Mr. L. Krishnan, President – IMTMA and Mr. P. G. Jadeja, Vice president IMTMA.

Mr. Vikram Kirloskar addressed the audience on the occasion, "The machine tool industry plays an important and impartial role, catering to the need of both, small and large automakers alike. The backbone of many major sectors of industrial activity in India, in the traditional manufacturing context, the machine tool industry in India has played and will continue to play a key role in enhancing competitiveness and enabling development of quality and excellence in the output of the manufacturing industry".

Talking about IMTEX FORMING 2014, Mr. Jamshyd N. Godrej, said, "The exhibition is a manifestation of cost effective alternatives to conventional metal working solutions. The machine tool industry needs to continuously innovate, upgrade and invest in technology."

Mr. L. Krishnan, President IMTMA, added - "Exhibitions like this will certainly stimulate the demand for metal forming equipments in the country and thus help the industry grow. "

The inauguration was followed by a ribbon cutting ceremony at the Exhibition Hall, which opened the doors to the IMTEX FORMING 2014 & Tooltech 2014.

The Inaugural session witnessed the presentation of two prestigious awards – the 5th 'IMTMA-Premier Outstanding Entrepreneur Award' to Chairman, ISGEC Heavy Engineering Ltd., Mr. Ranjit Puri, for his outstanding contributions and achievements in the metal forming industry and IMTMA President's Award to Managing Director, BIES, Mr. Abhijit Mukherjee for a dedicated life spent in the foundation of IMTMA and BIEC.

Key domestic delegations from Automotive Component Manufacturers Association (ACMA), Bharat Heavy Electricals (BHEL), Bharat Electronics Limited, COFMOW (Ministry of Railways), ISRO, NAL, GTTC, Government Tool Room & Training Centre, Ordnance Factory Board, Mazagon Docks, DRDL, Tractors Manufacturers' Association, Integral Coach factory, Hindustan Aeronautical Ltd. (HAL) and National Aerospace Lab visited the show in the span of 6 days.

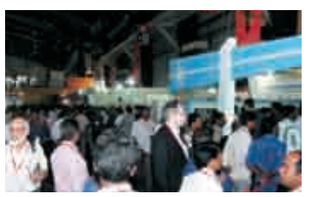
International delegations from Czech Republic and Namibia also visited the show on the 2nd and 4th day respectively. The delegation of Czech Republic came with a clear agenda of attracting investment from Indian companies in their country through Czech organizations.

The Namibian delegation was interested in studying how a developing nation can transform from a developing nation that is dependent on primary sector to a one that plays a meaningful role in manufacturing and value added processes and assessing global markets with competitive commodities.

The exhibition witnessed many decision makers and business heads from across the spectrum of Indian Metal Working Industry. It recorded confirmed business orders to the tune of INR 405 Crores and generated a high potential of business enquiries to the tune of INR 4,187 Crores.

The booked orders have shown an increase of 4% from previous exhibition whereas the generated enquiries have increased by 52%.

IMTEX Forming 2014 reflected the ground reality of the Forming industry with extensive trade related discussions and networking and set an optimistic theme for the future of Metal Forming industry.



ACTIVITIES DURING 2013-2014

NATIONAL PRODUCTIVITY SUMMIT 2013, IMTMA – SIEMENS PRODUCTIVITY CHAMPIONSHIP AWARDS AND PRODUCTIVITY BUZZ

IMTMA has been in the forefront of championing a productivity movement in Indian metal working industries. Productivity Summit 2013, the flagship event was organized by IMTMA on 15-16 November 2013 in Pune. The summit was well received by over 350 participants from about 100 companies.

Designed to highlight learning through case studies, Productivity Summit 2013 brought together productivity 'Gurus", champions and aspiring leaders on a common platform to share experiences, ideas and thoughts on new challenges facing productivity in metal working manufacturing industries.

IMTMA-Siemens Productivity Championship Awards recognize outstanding efforts in improving productivity in metal working industries setting new benchmarks & creating a spirit of competition. Awards are given to individuals or teams who have excelled in achieving superior performance through sustained productivity improvement. The awards are decided through competition involving case studies describing productivity improvement projects implemented by them bringing out clearly quantified benefits to the organization as a result of their efforts.

From around 300 entries received for the IMTMA-SIEMENS Productivity Championship Awards 2013 competition, ten short listed entries were selected for live case study presentations.

INAUGURATION AND KEYNOTE SPEAKERS

Inauguration was followed by two excellent keynote speeches by industry stalwarts. Mr. R. Gopalakrishnan, Director Tata Sons, shared his opinion against a very thoughtful topic "Has India blown it?"

He compared various aspects like economic growth, Urbanization, Disposable income of India with many other countries and explained how India has accelerated its growth in the new millennium compared to the old millennium. He mentioned that India has accelerated by 120 bases points being the second fastest growing economy. He concluded the speech on a positive note saying "India might have missed some opportunities but she has by no means blown it".

Mr. Shekar Viswanathan, VC Toyota Kirloskar Motor propounded on "Productivity and Macro Variables"; He explained the relevance of the automobile sector to machine tool by pointing on various macro variables which will determine the growth of the machine tool industry in India.

Dr. N. Ravichandran, ED, LUCAS TVS Ltd. spoke on the second day on "Next Generation Manufacturing through Lean Management". In his presentation he gave

insight on LUCAS TVS, changing business scenario, Challenges of the manufacturing industry.

The highlights of Productivity Summit 2013 were the IMTMA-SIEMENS Productivity Championship Awards and Productivity Buzz. The IMTMA-SIEMENS Productivity Championship Awards recognize and reward 'productivity champions' for their outstanding contribution in achieving superior performance through sustained productivity improvement. Productivity Buzz, a unique concept exhibition was organised to enable the productivity solution providers and seekers to come together under one roof to discuses their issues and find solutions to enhance productivity in their organizations. More than 40 solution providers displayed highly focused productivity solutions in the areas of Machining, Manufacturing, Automation, Workholding & Fixturing, Metal Forming, Die & Mould, Welding and IT enabled solutions, amongst others.

AWARD WINNERS

The first prize was awarded to Hero Motocorp Ltd., Rane (Madras) Ltd. and TVS Motor Co. Ltd., the second prize was given to Godrej & Boyce Mfg. Co. Ltd., Bosch Ltd. and Rane TRW Steering Systems Ltd. The third prize went to Mahindra & Mahindra Swaraj, Laxmi Oil pumps Pvt. Ltd. and Reliable Autotech Pvt. Ltd. A Certificate of Appreciation was awarded to Tata Steel Processing and Distribution Limited

INTERNATIONAL SEMINAR ON FORMING TECHNOLOGY

Expertise, innovations, technology, trends and everything related to the field of forming technology was buzzing at International Seminar on Forming Technology (ISFT) organized by Indian Machine Tool Manufacturers' Association (IMTMA) on 22 January 2014 at BIEC, Bangalore.

The seminar was divided into three concurrent sessions under three broad subjects: Processes, Emerging Technologies and New Materials, Tooling & Design.

The seminar brought together 18 National and International speakers from across the globe representing renowned companies like – Altair, BLM Group, Data M Sheet Metal Solutions GmbH, Dreistern GmbH, Electropneumatics & Hydraulics, Fraunhofer Institute, Fraunhofer IPT, GE Global Research, Godrej & Boyce, IIT-Bombay, Indian Institute of Science (IISc), Novelis Inc, Rise-Es Inc, Safan Darley BV, Stratasys, Tata Motors, Yamazaki Mazak India Pvt.Ltd. The keynote address on 'Overview and the latest developments in Forming technology' by Dr. Andreas Sterzing and Mr. Peter Blau, Fraunhofer IWU, Chemnitz, Germany set the mood for the seminar.

ISFT brought together the fraternity of forming technology on to a common platform. Latest trends, developments and research works in forming industry in India and globally were well reflected at the seminar which received an overwhelming response from about 400 delegates.

The B2B session provided an opportunity for users and providers of technology, machinery and processes to meet in an informal setting where they discussed applications, commercial issues, joint ventures, technology transfers, collaborations amongst other relevant topics.

JAGRUTI - IMTMA YOUTH INITIATIVE

To familiarize engineering students with the machine tool industry and the technological happenings in this industry segment, the Association organized the sixth "JAGRUTI – IMTMA Youth Programme", with support from "UDAAN" members. This unique initiative was organized during IMTEX FORMING and Tooltech 2014 on 24 - 25 January 2014 at Bangalore International Exhibition Centre (BIEC).

ACTIVITIES DURING 2013-2014

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The programme was attended by 35 mechanical engineering students representing 17 engineering institutions, from all across India. It comprised a comprehensive guided tour of IMTEX FORMING 2014 and Tooltech 2014. The students also had an opportunity to visit 'IMTMA Productivity Institute' as well as 'IMTMA Design Institute'.

Unique aspect about this Jagruti programme was an exposure to actual shop-floor operations in a manufacturing set-up, through 'live' demos at the state-of-the-art facility of Ace Manufacturing Systems Limited.

ACADEMIA PAVILION

Collaboration between industry and academia offers mutual benefits as it facilitates innovation in industry and at the same time ensures industrial relevance in academic research. Initiated in 2011, IMTMA invites prestigious institutions that have done commendable work in the area of research and development to participate in the IMTEX Academia Pavilion. The Academia pavilion at IMTEX Forming 2014 showcased best projects and research work from 24 institutions and it is noteworthy that one was from United Kingdom.

Awards and cash prizes for the best project and research initiatives were announced on January 27, 2014. 1st prize was bagged by Treelabs (IIT - Bombay); 2nd prize went to R. V. Collage of Engineering, Bangalore; and the 3rd prize was bagged by Amrita Vishwa Vidyapeetham, Kollam. The consolation prizes went to NCAIR (IIT - Bombay) and NMAM Institute of Technology, Karnataka.

5TH MACHINE TOOL INDUSTRY SUMMIT, 1 - 4 MAY 2014, GOA

The Fifth Machine Tool Industry Summit was held at Goa on 1-4 May 2014. Over 250 delegates made it a successful mega event by actively participating from across India. The three day summit included well planned strategic sessions, panel

discussions and presentations from experts and achievers from Indian machine tool industry. The summit was divided into multiple thought provoking sessions; some of them held concurrently, with ample discussion breaks for company introspections, brain storming, Q&A sessions and networking.

The Inaugural address by Mr. Gopalakrishnan, Director, Tata Sons and Chief Guest for the inaugural evening, was

a refreshing and distinctive approach on "What does the CEO really wants from you." This session demystified the 4 As for managerial success and emphasized that they be learned and deployed in varying proportions as one climbs the corporate ladder. Mr. Gopalakrishnan pertinently pointed out the need to develop HMC-Human Motivation Cultivation along with the production of HMCs and VMCs by the industry. On the occasion, Mr. Gopalakrishnan also released forecasting reports on machine tool industry commissioned by IMTMA and undertaken by BDB consulting Pune.

Highlights of the summit included sessions on 'Breaking the glass ceiling' and 'Profit maximization by value stream mapping.' The summit put enough emphasis on R&D and entrepreneur values by showcasing case studies from some of the successful companies. Issues like - need for de-risking the business models, incubating skill development and supply chain management were also discussed.

Towards the conclusion, IMTMA presented its upcoming and ongoing endeavours for the machine tool industry including government advocacy, technical training, industry exhibitions, export promotion cell, and a new technology centre upcoming in Pune. IMTMA also introduced a new Business Excellence road map for achieving the machine tool industry's vision 2020.

REGIONAL COUNCIL ACTIVITIES

21ST MEETING OF IMTMA REGIONAL COUNCIL (NORTH)

10 January 2014 : 'IMTMA Office' : Gurgaon

Regional Council (North) of IMTMA had scheduled its 21st meeting on 10 January 2014 at the northern region office in Gurgaon. The meeting was attended by close to 25 RC (N) members. Following this meeting, an 'interactive meeting and plant visit' was undertaken to Honda Motorcycle & Scooter India Private Limited in Manesar, Gurgaon.

MEETING OF IMTMA REGIONAL COUNCIL (SOUTH)

19th February 2014 : Ace Designer, Foundry Division. Bangalore.

Meeting of the IMTMA Regional Council (South) was conducted on 19th February 2014, coinciding with the plant visit to Ace Designer, Foundry Division in Bangalore.

The foundry is equipped with state-of-the-art equipment and is largely automated and with the most modern smoke and dust drains away plants, keeping in view all the pollution control requirements of modern era and with compatibility. It was attended by close to 10 RC (S) members.

MEETING OF IMTMA REGIONAL COUNCIL (WEST)

18 June 2014 : IMTMA Technology Centre, Chinchwad :Pune

Meeting of the IMTMA Regional Council (West) was conducted on 18th June 2014, at Pune, coinciding with the inauguration of new IMTMA Technology Centre facilities. The meeting was attended by 15 RC (W) members.

ACTIVITIES DURING 2013-2014

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TRAINING INITIATIVES

INTERACTIVE FACULTY MEET ON "OPPORTUNITIES IN INDUSTRY"

In order to highlight "Opportunities in Manufacturing Industry" and to spread awareness about IMTMA's training initiatives, an industry-institution interaction was organized by IMTMA at its BIEC Conference Centre, Bangalore, on 13th May 2014. The meet was attended by delegates including HODs, Professors, TPOs, and Principals representing 12 educational institutions whereas industry was represented by HR Managers of various organizations and IMTMA officials.

Interacting with the attending delegates from 12 educational institutions from in and around Bangalore; President – IMTMA spoke about role of Machine Tool Industry in 'Manufacturing Growth' and 'Opportunities in Manufacturing Industry'.

HR INTERACTIVE FORUM

To ensure that IMTMA is rightly addressing the training needs of the industry, an 'Interactive HR Meet' was organized on Friday, 23rd May, 2014, at its BIEC Conference Centre at Bangalore.

23 delegates from 19 companies actively took part in the discussions and made it a successful event. A unique first was

initiation of 'HR Forum' wherein industry experts shared their experience and interacted with delegates. .

PLACEMENT FAIR FOR IMTMA FINISHING SCHOOL STUDENTS

A Placement Fair was conducted at IMTMA Technology Centre premises on 12th May 2014. Students who had earlier completed IMTMA's 'Finishing school Programme in Production Engineering' participated and benefited.

On the occasion, visiting officials from KTTM addressed the students and provided them with an industry orientation.

IMTMA IS NOW ASME AUTHORIZED TRAINING PROVIDER

IMTMA has become a coveted authorized training provider (ATP) of ASME recently. It has been certified for providing IACET accredited ASME training courses on ASME Y14.5 standard to engineering professionals across India.

"DESIGN OF FIXTURE" – A NEW SPECIALIZATION PROGRAMME DESIGN INSTITUTE

A new programme on Design of Fixtures was launched by IMTMA Design Institute recently. It included all the processes of fixture designing from concept to finish design. Pre-design activities like design input, conceptualization, process planning, accuracy consideration, cycle time estimation, POKAYOKE, 3D modeling of parts and assembly, using popular design CAD tools and preparing the final manufacturing drawings are included as the training modules. Design for Accuracy, Manufacturing and Assembly are also addressed during the course. Highly interactive and including hands on training sessions, the new programme covered entire 360° view on fixture design aspects.

AWARDS

5TH 'IMTMA-PREMIER OUTSTANDING ENTREPRENEUR AWARD'

The 5th 'IMTMA-Premier Outstanding Entrepreneur Award' was bestowed on Mr. Ranjit Puri, Chairman, ISGEC Heavy Engineering Ltd., for his outstanding contributions and achievements in the metal forming industry. The award was presented at the inauguration ceremony of IMTEX 2014 and Tooltech 2014. While expressing his sincere thanks to IMTMA for conferring the IMTMA-Premier Outstanding Entrepreneur Award', Mr. Puri said; "completion is the key driving force for attaining success and moving ahead in the right direction; until and unless one sees the threat from competition, one is not motivated enough to go the extra mile to reach the top position."

IMTMA PRESIDENT'S AWARD

IMTMA President's Award was bestowed on Mr. Abhijit Mukherjee, Managing Director, BIES, for a dedicated life spent in the foundation of IMTMA and BIEC. Accepting the IMTMA President's Award, Mr. Mukherjee said, "It was a great privilege to be associated with IMTMA for over two decades." The award was presented at the inauguration ceremony of IMTEX 2014 and Tooltech 2014.

SIMTOS 2014 PARTICIPATION

9-13 APRIL 2014

To promote Brand 'India' and to gain more insights into South Korean Machine Tool Industry, IMTMA participated in the recently held SIMTOS – the annual International specialized exhibition for Equipment, Instrument and Tools for the Metal-working industry from 9-13 April 2014. Along with spreading awareness about forthcoming IMTEX and DMTE & AMTE exhibitions, IMTMA representative also participated in the "25th Asian

Machine Tool Associations' Coordinating Meeting" at Seoul, South Korea.

IMS CERTIFICATION

IMTMA has recently obtained Integrated Management System (IMS) certification. IMS covers key activities of IMTMA including Trade Fairs, etc. and more importantly, Bangalore International Exhibition Centre - recognized as one of the best infrastructure facilities for industrial exhibitions in the country.

Integrated Management System (IMS) is a set of internationally recognized standards that encompass Quality, Environment and Health & Safety. IMS Certification is accredited when all these three critical management systems: ISO 9001 - Quality Management System, ISO 14001 - Environmental Management System and OHSAS 18001 - Occupational Health and Safety Management System, are voluntarily implemented and audited.

ADVANCED MACHINE TOOL TESTING FACILITY - AMTTF

Advanced Machine Tool Testing Facility (AMTTF) is a joint project of the Machine Tool industry and the Dept. of Industrial Policy and Promotion (DIPP), Ministry of Commerce & Industry, Government of India to establish a state-of-the-art machine tool testing facility at the CMTI, Bangalore.

AMTTF is a dedicated facility equipped with the latest equipment and facilities to test machine tools, accessories, parts and subsystems to establish their performance and reliability against international standards.

AMTTF offer services of Performance Evaluation of Machine Tools and sub-systems, Calibration of Machine Tools, Static, Dynamic, Thermal Testing and Modal Analysis, Reliability Tests, Trouble shooting and remedial measures, Sub-assembly Testing (Spindles, axes etc.), EMC / EMI Testing as recommended for CE Marking, Spindle Error Analysis, with reference to the relevant parts of the ISO, ASME and VDI/DGQ Standards.

AMTTF has carried out several machine tool testing, inspection and performance evaluation for several renowned machine tool manufacturers.

TRAINING PROGRAMMES

DESIGN OF SHEET METAL PARTS

11-12- JULY, BANGALORE

24 PARTICIPANTS

Sheet Metal Forming Technology plays a crucial role in a variety of product segments like automobiles, auto-components, consumer durables and other sheet metal products for delivering high quality products.

Keeping this in view, Indian Machine Tool Manufacturers' Association (IMTMA), and Sheet Metal Forming Research Association (SMFRA) jointly organised a two day 'Primer Course on Sheet Metal Forming Technology' on 12 - 13July 2013 at New Delhi.

GEOMETRIC DIMENSIONING & TOLERANCING IN DESIGN THROUGH MANUFACTURING

15-17- JULY, BANGALORE
27 PARTICIPANTS

8-9- OCT, PUNE
16 PARTICIPANTS

15-16 - APRIL, DELHI
11 PARTICIPANTS

17-18 JANUARY, BANGALORE
31 PARTICIPANTS

18-20- JUNE, BANGALORE
20 PARTICIPANTS

Taking note of the importance of understanding the system of GD&T and the methods of applying it in real time design by using case studies, examples and exercises; understanding the philosophies of how, when, and where to apply geometrics along with common sense tips for producing quality parts, providing a solid grounding in the fundamentals of geometric tolerancing based on the latest ASME Y14.5-2009 Standard; and to prepare participants for the ASME Geometric Dimensioning & Tolerancing Professional (GDTP-Technologist) Level examination; Indian Machine Tool Manufacturers' Association (IMTMA) had organized multiple training programmes on this topic.

ADVANCED TRAINING PROGRAMME ON GEOMETRIC DIMENSIONING & TOLERANCING

18-19- JULY, BANGALORE 22 PARTICIPANTS

Taking note of the importance of imparting industrial designers & geometric professionals with knowledge on best practices in GD&T through in-depth knowledge on the new concepts and revisions as per the latest ASME Y14.5-2009 Standard; and for providing inputs on applying advanced GD&T controls, with comprehensive focus on the application of the correct datum structures and geometric tolerances on detail parts based on functional requirements and cost implications for the final assembly and for preparing participants for successfully passing the ASME Geometric Dimensioning & Tolerancing Professional (GDTP) Senior Level examination.; IMTMA had organized a two day training programme on this topic, on 18th and 19th July 2013 at Bangalore.

GEAR METROLOGY & MEASUREMENT METHODS

24-JULY, BANGALORE 41 PARTICIPANTS

20 DECEMBER, DELHI
9 PARTICIPANTS

30-APR, PUNE
19 PARTICIPANTS

Gears and Gear drives are one of the key components of all kinds of vehicles, machine tools, aircrafts, household appliances as well as a broad variety of industrial equipments. Today the designers are facing challenges of demands about increasing lifetime, power transmission and noise emission, whereas the size and weight of gear drives is constantly reduced. The accuracy of gears is crucial for achieving the above functional demands. Proper understanding of gear metrology and Measurement of gears is important for ensuing required accuracy and quality, Lower overall cost of manufacture by controlling rejects and scrap, Control machines and machining practices and Determine hear treat distortions to make necessary corrections.

Keeping this in view, Indian Machine Tool Manufacturers' Association (IMTMA) has organized a one day seminar on Gear Metrology and Measurement Methods in Bangalore an Pune.

DESIGN & ANALYSIS OF MACHINE TOOL SPINDLE

30-31- JULY, BANGALORE
21 PARTICIPANTS

Machine tool spindle is most sophisticated member in machine tool and plays a vital role for better performance, higher efficiency and accuracy. Design of spindle is very important and a critical activity of machine tool design process. Spindles are integral part of the machine tool and responsible for quality of the final product produced and overall productivity of the machine tools. It is very essential to analyze and optimize the design for low cost and better performance. Sizing of the spindle for machine capability in terms of dimension, power, speed, force and accuracy are the key challenges for machine designers for right machine and right application.

Keeping this in view, IMTMA organized a two day training programme on "Design & Analysis of Machine Tool Spindle" on 30 - 31 July 2013 at Bangalore.

PRIMER COURSE ON SHEET METAL FORMING

12-13- JULY, DELHI
9 PARTICIPANTS

Gear manufacturing is a fairly complex metal cutting process and forms an integral part of many industrial products. Gears and Gear drives are one of the key components of all kinds of vehicles, machine tools, aircrafts, household appliances as well as a broad variety of industrial equipments. Proper understanding about the various Gear manufacturing processes and controlling parameters is essential in order to meet the growing demands for better productivity and quality of gears.

Keeping this in view IMTMA organized a 2 day seminar on Basics of gear Manufacturing Processes on 12 - 13 July 2013 at Pune.

BASICS OF GEAR MANUFACTURING PROCESSES

12-13 JULY, PUNE
27 PARTICIPANTS

14-15 MARCH, BANGALORE
19 PARTICIPANTS

Gear manufacturing is a fairly complex metal cutting process and forms an integral part of many industrial products. Gears and Gear drives are one of the key components of all kinds of vehicles, machine tools, aircrafts, household appliances as well as a broad variety of industrial equipments. Proper understanding about the various Gear manufacturing processes and controlling parameters is essential in order to meet the growing demands for better productivity and quality of gears. Keeping this in view, IMTMA organized training programmes at Pune and Bangalore.

COST EFFECTIVE AUTOMATION FOR METALWORKING

23-JULY, PUNE
17 PARTICIPANTS

'Automation' is perceived as a cutting edge of competitive manufacturing and assumes paramount importance in facilitating increased productivity while reducing production costs. The range of automation tools vary from simple, low-cost equipment to highly sophisticated and expensive systems. Appropriate level of automation reduces cost in manufacturing not only through increased productivity, but also improves quality through consistent and reliable production. Keeping this in view, IMTMA organized a one day seminar on "Cost Effective Automation for Metal Working" on 23rd July 2013 at IMTMA, Pune.

PRACTICAL SOLUTIONS FOR DESIGNING COMPLEX INJECTION MOULDS

30-31- JULY, PUNE 12 PARTICIPANTS

Today many commercial tool rooms complain that they are not profitable. At the same time they are unable to meet their delivery commitments. Designers spend time on shop floor to resolve problems and toolroom engineers in the design department seeking clarifications. Rework of the Die or Mould is an accepted fact; after all moulds are not expected to work right the first time. Does any of this sound familiar? Why do users want to import moulds? Is it because they work right the first time? What needs to be done as a designer to make plastic injection Moulds and Dies First Time Right? The foremost challenge faced by the tool rooms are shorter lead times for tool development and stringent quality requirements. Tool design is a very crucial phase, directly affecting both lead time and quality. Keeping this in view , IMTMA conducted a 2 day training programme on "Practical Solutions for Designing Complex Plastic Injection Moulds" on 25 - 26 July 2014 at Pune.

DESIGN FOR MANUFACTURING AND ASSEMBLY

12- 13 AUG, BANGALORE
23 PARTICIPANTS

26- 27- AUG, BANGALORE
17 PARTICIPANTS

24-25 JUNE, PUNE 32 PARTICIPANTS

Design for Manufacturing and Assembly (DFMA) helps designers to build quality into robust design at least cost. In addition to achieving quicker product development and reducing cost of product development, DFMA also ensures that the transition from the design phase to the production phase is as smooth and rapid as possible.

Taking note of the importance of understanding the design guide lines for different manufacturing processes; understand and inculcating the practice of concurrent costing while designing; learning design concepts for achieving Poka Yoke; and for evaluating the design efficiency for assembly operations; IMTMA organized 2 two day workshops on this topic, at Bangalore.

COLD FORGING / COLD EXTRUSION

23-24 AUGUST, BANGALORE
34 PARTICIPANTS

20-21 FEBRUARY, DELHI
10 PARTICIPANTS

In today's manufacturing scenario, where shortage of raw materials, power & increasing pressure to reduce costs are the order of the day, Cold Forging is possibly the most suitable solution for these pressing issues. Cold forging technology utilizes innovative design coupled with process sequencing to not only reduce costs by utilizing lesser raw material but also imparts greater strength to the component, in addition to increased productivity. The primary advantage is the material savings achieved through precision shapes that require little finishing, completely contained impressions and extrusion-type metal flow yield draft less, close-tolerance components, production rates are very high with exceptional die life. However, Tool design and manufacture are very critical for reliable production of parts. Keeping this in view, IMTMA conducted a 2 day programme at Delhi.

CONDITION MONITORING OF INDUSTRIAL MACHINES

29-30 - AUG, BANGALORE
14 PARTICIPANTS

"CONDITION MONITORING" is one of the strategies which can keep the machines in working condition at its highest efficiency and avoid unwanted and costly breakdown. Over a period of time, the "Condition Monitoring" has been evolved in to a very sophisticated science. The Vibrations, noise, temperature, current, power consumption etc indicate the condition of the machine. These parameters if recorded and analyzed over a period of time, tell about the condition of the machine and warn a possible failure in future.

Keeping this in view, Indian Machine Tool Manufacturers' Association (IMTMA) has organized a two day workshop on "Condition Monitoring of Industrial Machines" on 29 - 30 August 2013 at Bangalore.

SEMINAR ON PLC TECHNOLOGY IN INDUSTRIAL AUTOMATION

19-AUG, DELHI
10 PARTICIPANTS

Programmable Logic controller (PLC) is an Electronic device used for automating electromechanical processes, such as control of machinery on factory assembly lines. PLC is called 'The Work Horse' and represents a key driver in automation, production & process planning in the manufacturing industry.

Today PLC has become a very widely used and accepted tool in Industrial Automation

in various kinds of Machines, Processes, Shop floor Practices, Utilities etc. To get the best results out of this technology, in the areas of Automation, Productivity Improvement, On Line Inspection, Easy Batch Changeovers, Centralized Control, Automatic MIS Generation, Energy Saving etc, the Power of this technology needs to be more clearly understood by key level decision makers from various functions like Design / Production / QC / Process Planning / Maintenance etc. A one day seminarfocusing on PLC Technology in Industrial Automation was organize at at Gurgaon.

REDUCING CYCLE TIME & MACHINING COST ON CNC MACHINING CENTRES

6-7- AUGUST, PUNE
10 PARTICIPANTS

Reduction in cycle time and machining cost plays an important role in enhancing productivity especially in large volume production. Machine utilization has a major impact in reducing the manufacturing cost of components.

Reducing cycle time requires eliminating or reducing non-value-added activity. Keeping this in view, IMTMA organized a two day programme on "Reducing Cycle Time and Machining Cost on CNC Machining Centres"

SPINDLE MAINTENANCE FOR METAL CUTTING & INDUSTRIAL MACHINERY

20-21 AUGUST
17 PARTICIPANTS

28-29 NOVEMBER, DELHI
8 PARTICIPANTS

24-25 JUNE, BANGALORE
13 PARTICIPANTS

Spindles are usually designed with the highest precision bearings that are available, and the usual cause of failures in 90% of the causes is minute particles that work their way past the seals and into the balls and races of the bearings. So, cleanliness and other factors of frequent maintenance can really extend the spindle life significantly. It hence becomes vital for the maintenance engineer to follow certain measures, so as to increase the life of a spindle. Keeping this in view, 3 Training Programmes were organized by IMTMA.

SEMINAR ON ROLL FORMING TECHNOLOGY AND ITS APPLICATIONS

27-AUGUST, PUNE
25 PARTICIPANTS

In order to address the Roll forming technology, right from design and development of formed products until production practices, IMTMA organized a one day seminar on "Roll forming Technology and its applications at Pune.

LATEST TRENDS IN HEAT TREATMENT AND ADVANCED SURFACE ENGINNERING

30-31- AUGUST
24 PARTICIPANTS

Heat Treatment is no longer heating and quenching. Metallurgy is the oldest art and science, today's knowledge banks and computerized automation has revolutionized this ancient art into a precise science. Heat treatment forms the core of metallurgy - a vital core because today there are more than 12,000 grades of steels, thus forming the basis for judicious materials selection. Also Thin film super hard coatings are getting well-established in various fields with their major physical properties.

The industry today needs clear-cut first-hand knowledge about performing an 'educated' choice when it comes to selecting the right type of surface treatment. Keeping this in view, IMTMA orgainized a two day Workshop on Latest trends in Heat treatment and Advance surface engineering at Pune.

ISO/IEC 17025-2005 FOR MECHANICAL TESTING AND CALIBRATION LABORATORIES

11-SEPTEMBER, BANGALORE
23 PARTICIPANTS

9-12 OCTOBE, BANGALORE
10 PARTICIPANTS

Establishment of Quality Management Systems in a test lab or a calibration lab assures confidence in measurements, streamlining the laboratory operations, improve laboratory's competitiveness, reduce risks & control on the variables. ISO/IEC 17025: 2005 Standard provides the criteria for the general requirements for the competence of testing and calibration laboratories. Keeping this in view,IMTMA organized two awareness programmes on ISO/IEC 17025: 2005 in Bangalore.

CLEANING OF MACHINED COMPONENTS

18 SEPTEMBER, BANGALORE
26 PARTICIPANTS

29 APRIL, PUNE 27 PARTICIPANTS

Parts cleaning, like most metalworking processes, are experiencing ever tightening specifications. Owing to the constantly increasing requirements in terms of efficiency, quality and environmental protection the cleaning of industrial parts has become absolutely essential in modern manufacturing processes. It is highly critical especially in case of automotive components, aerospace and medical implants. Keeping this in view, IMTMA organized seminars on "Cleaning of Machined Components in Bangalore and Pune.

FAILURE MODE & EFFECTS ANALYSIS

19-20 SEPTEMBER, BANGALORE
18 PARTICIPANTS

13-14 MAY, PUNE
15 PARTICIPANTS

'Failure Mode & Effects Analysis' (FMEA) is an "error prevention" oriented and proactive methodology that tries to preempt the occurrence of errors; reduce their significance (even if they were bound to occur) and in unavoidable circumstances, to increase the chance of error detection, so that the process could then be suitably controlled. FMEA is an aid for continuous improvement which fits into a PDCA (Plan-Do-Check-Act) pattern of activity. Whenever changes in product or processes or vendor / supplier are envisaged or effected, FMEA is redone to evaluate their effects.

Taking note of the importance of propagating the concept of FMEA as a risk management and preventive quality assurance technique, two workshops were organized by IMTMA on this topic.

BURR MANAGEMENT IN MACHINING

25 SEPTEMBER, BANGALORE
34 PARTICIPANTS

As long as there has been metal cutting, there have been burrs—an unwanted side effect of the process. Barring a revolutionary change, burr formation will always be a problem. With a few exceptions, conventional machining techniques always produce burrs. Burr prevention requires both conventional and nonconventional approaches. Keeping this in view, IMTMA organised a 1 day programme on burr management at Bangalore an Delhi.

SEMINAR ON DIE & MOULD MANUFACTURING

24-25 SEPTEMBER, CHENNAI
13 PARTICIPANTS

11-12 FEBRUARY, PUNE
16 PARTICIPANTS

Changing customer expectations and rapid model changes requires a fast turn-around in the manufacture of Dies & Moulds. Presently, production demands require the ability to react to frequent product changes, shorter production runs, lower inventory levels and higher productivity.

To meet these challenges a host of new technologies have evolved over the years. Taking note of the importance of propagating the concept of Concurrent Engineering methodology and information on Advanced Materials for Dies & Moulds, ERP solutions tailor- made for Toolroom operations and the role of CAD / CAM / CAE in die manufacturing; IMTMA organized a two day workshop on this topic, on 24th and 25th September 2013 at Chennai.

DESIGN OF EXPERIMENTS

26-27 SEPTEMBER, BANGALORE

11 PARTICIPANTS

Cost of Product Quality Issues in Repair and Re-Work not only leads to erosion of profit, but also leads to loss of reputation and competitive advantage in Global economy. It is absolutely essential to understand the root cause of issues, either in Predictive Design of New Products or in Fixing Field issues of existing products or even enhancing the productivity in a Manufacturing environment. Design of Experiments (DoE) is one of the most successful structured approach in understanding the real life issues and identifying the real factors to fix them, to avoid repetition or recurrence of the same issues after a period of time by adopting a "Quick Fix Solutions". DoE presents techniques for finding out those inputs which have maximum influence on the output through an minimum set of experiments. DoE saves considerable time & efforts in trouble shooting, identifying quality inputs and in rectifying the total system. Keeping this in view, IMTMA organized workshops on "Design of Experiments (DoE) in Solving Real Life Problems" at Bangalore and Pune.

MEASURING PRODUCTIVITY THROUGH OEE

13 SEP SEPTEMBER, PUNE

17 PARTICIPANTS

12 MARCH, DELHI

TRAINING PROGRAMMES

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14 PARTICIPANTS

11 JUNE, BANGALORE

16 PARTICIPANTS

Profitability in any company is determined by efficiency of operation. In lay terms this means how effectively one uses ones production resources.

Overall Equipment Effectiveness (OEE) is a key performance indicator, which measures out of available time how much time is efficiently used in producing saleable goods. OEE is a performance metric compiled from data on machine availability, performance efficiency and rate of quality that is collected either manually or automatically.

In most companies bottleneck machines or key machines determine throughput of the process. When a critical machine is inoperable, it brings downstream operations to a standstill. This can negatively affect delivery commitments to the customer, which in turn impacts cash flow and revenue.

Taking note of the importance of understanding productivity metrics using OEE and losses in production, and the concept of OEE calculation and software solutions for capturing OEE on a regular basis; IMTMA organized three workshops at Pune, Delhi and Bangalore.

ADVANCED COURSE IN SHEET METAL FORMING

20-21 SEPTEMBER, PUNE
25 PARTICIPANTS

The multiple faces of modern sheet metal forming techniques are applied throughout a wide spectrum of economy, ranging from the automotive industry and machine manufacturing to electrical engineering and electronics. Comparing to conventional manufacturing, advanced sheet metal forming methods offer several advantages, such as decrease in work piece cost, tool cost and product weight, improvement of structural stability and increase of the strength and stiffness of the formed parts, more uniform thickness distribution, fewer secondary operations, etc.The automotive industry is the main impetus worldwide for new developments as is seen in its efforts to optimise lightweight constructions coupled with high strength. Now days, Simulation / CAE Tools are increasingly used to develop the product and process, replacing lengthy trial and error processes on real prototypes.

Keeping this in view, IMTMA and Sheet Metal Forming Research Association (SMFRA) organized a 2 day advanced course on Sheet metal forming technology on 20 - 21 September 2013 at Pune.

EFFECTIVE MAINTENANCE OF CNC MACHINES FOR PRODUCTIVITY IMPROVEMENT

22-24 OCTOBER, BANGALORE
11 PARTICIPANTS

24-26 FEBRUARY, PUNE
12 PARTICIPANTS

18-20 JUNE, DELHI
8 PARTICIPANTS

A National Survey on reliability of CNC machines conducted by IMTMA highlighted the difficulties confronted by end users in controlling the downtime of CNC machines. Interactions with end users indicated the need to familiarize and upgrade their knowledge base to optimize the usage of CNC machine tools, for higher productivity.

Effective usage of CNC machines is the key to achieve the desired output. With the rapid changes in hi-precision

manufacturing process, there is a need to continuously update the knowledge and skills of the 'Man-behind-the-Machine'. Diagnostics is another important aspect of maintenance, which is most often ignored. Taking note of the importance of imparting knowledge on the scientific methods of preventive & break-down maintenance of machine tool manufacturing & user industries; Workshops were organized by IMTMA at Bangalore, Pune and Delhi.

ADVANCE CNC PROGRAMING OF MACHINING CENTRES

29-31 OCTOBER, BANGALORE
12 PARTICIPANTS

CNC Machining Centres form the core of manufacturing operations right from producing auto parts to machine critical aerospace components. Its effective application can ensure increased productivity, highest accuracy, rigidity and improved surface finish. A range of components can be consistently manufactured to very close tolerances, leading to improved quality; efficient production process; reduced costs and bare minimum cycle times. In modern CNC machine shops, every second counts and the CNC programme drives the machine efficiency and productivity. Many a times, the CNC programme contains lot of idle movements (air cutting) and is not optimized for minimum cycle time. Enhanced knowledge on CNC programming and its control features are now very critical to keep the cost per component to the minimum.

Keeping this in view, IMTMA organized a one day training programme on "Advanced Programming for CNC Machining Centre" on 29 - 31 October 2013 at Bangalore.

TOPS-8D-STRUCTURED METHOD OF PROBLEM SOLVING FOR ENGINEERING INDUSTRIES

30 OCTOBER, PUNE
5 PARTICIPANTS

22-23- APRIL, BANGALORE
22 PARTICIPANTS

Critical, complex problems arising everyday from cross-functional disciplines in the work environment can wreck havoc and affect your bottom-line big time if the root cause is not identified quickly and correctly. The problems usually persist and recur periodically failing any preventive actions or due to limitations in problem solving approach of the untrained individual. We often see departments passing the buck across the hallway to get the monkey off their back.

TOPS-8D is a highly structured, problem solving tool perpetuated by FORD and is used by effective managers across the world in problems pertaining to Product/Process Quality as well as non-technical - Management / Marketing zones. Understanding of the data handling and analysis tools included in the TOPS-8D approach can make all the difference.

Keeping this in view, IMTMA conducted training programmes on "TOPS-8D-Structured method of problem solving" at Pune and Bangalore.

FUNDAMENTALS OF PRESS TOOL DESIGN

21-22 NOVEMBER, BANGALORE
18 PARTICIPANTS

Almost all exterior parts of modern automobiles are made of pressed sheet metal parts (except bumpers). The strength, formability, paintability, durability and cost make sheet metal the most preferred material of choice for automobiles as well as other applications including white goods and host of other products. Sheet metal press tools involving cutting, bending, forming and drawing operations form the basis for manufacturing such parts. Therefore Tool design and manufacture is highly crucial for producing consistent quality sheet metal parts.

Taking note of the importance of providing tool designers & sheet metal designers with in depth knowledge on how materials behave under press tools; IMTMA had organized a two day workshop on this topic, from 21st & 22nd November 2013 at Bangalore.

VFD TECHNOLOGY FOR INDUSTRIAL AUTOMATION AND ENERGY CONSERVATION

27 NOVEMBER, BANGALORE
11 PARTICIPANTS

Speed Control of 3 Phase Induction Motors by using Variable Frequency Drive is a very widely used technology in various industrial applications. With advances in VFD Technology new application possibilities are opening up. With energy bills rising rapidly, new developments in VFD technology enables significant cost savings. Industrial Automation is moving towards Intelligent Automation and VFD has a key role to play. This seminar will explore these new developments.

Keeping this in view, IMTMA organized a one day seminar on "VFD Technology for Industrial Automation and Energy Saving" on 27th November 2013 at Bangalore.

WORKHOLDING & FIXTURING CLINIC FOR PRODUCTION ENGINEERS

28-29 NOVEMBER, BANGALORE
13 PARTICIPANTS

Innovative solutions in workholding and fixturing allows in defect less and smooth production. Their optimum use not only improves productivity but eliminates quality defects. Often problems related to poor quality and productivity are a direct consequence of poor fixturing in terms of its choice or design. Reduction in set-up change is a challenge most manufacturers face and this is directly related to quality of fixturing.

Keeping this in view, IMTMA organized a 2 - day programme on Workholding and Fixturing Clinic for Production Engineers on 28 - 29 November 2013 at Bangalore.

VISUAL FACTORY/VISUAL MANAGEMENTVISUAL FACTORY/VISUAL MANAGEMENT

26-27 NOVEMBER, PUNE
15 PARTICIPANTS

Visual factory / Visual management refers to how data and information is conveyed at the time and place it is needed, using visual methods such as signs, charts, an dons, etc., The visual factory is one of the key concepts of lean manufacturing and it reduces the time and resources required to communicate information verbally or in written form.

With cost being a rising concern today, companies are attempting to reduce cost by improving productivity and work

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efficiency. Implementing visual factory plays a big role in improving communication and work efficiency. The benefits of having a visual workplace include is that it will improve productivity, safety, quality, on-time delivery, profits and employee morale.

Keeping this in view, Indian Machine Tool Manufacturers' Association (IMTMA) had organised 2 days workshop on Visual Factory/Visual Management ; Paving Way for Lean, TQM and TPM Implementation on 26 - 27 November 2013 at Pune.

SELECTION, ASSEMBLY AND TROUBLE SHOOTING OF LINEAR MOTION GUIDEWAYS & BALL SCREWS FOR INDUSTRIAL MACHINERY

29-NOVEMBER, PUNE
15 PARTICIPANTS
13 MARCH, BANGALORE 20 PARTICIPANTS

Linear Motion Guide ways and Ball screws form one of the critical elements of precision industrial machinery. In latest CNC machines, the speed and accuracy of axis movements required for high speed machining is realized by adopting LM guide technology. Recirculations of Ball screws are available in different configurations and accuracy grades. Proper selection and mounting of these elements is crucial for achieving the desired levels of accuracy on modern machine tools.

For the benefit of machine tool manufacturers as well as users, Indian Machine Tool Manufacturers' Association (IMTMA) organised a one day training programme on "Selection, assembly and trouble shooting of LM Guide ways and Ball screws for Industrial Machinery" at Pune and Bangalore.

PLASMA NITRIDING & VACUUM HEAT TREATMENT

5-6 DECEMBER, BANGALORE
10 PARTICIPANTS

Taking note of the importance of providing practicing metallurgists & organizations focused on providing heat treatment services with in depth knowledge on metallurgical aspects of both Plasma Ion Nitriding (PIN) and Vacuum Heat Treatment (VHT), their advantages, limitations, existing industrial applications and future possibilities; IMTMA had organized a two day workshop on this topic, on 5th & 6th December 2013 at Bangalore.

DESIGN OF PRESSURE DIE CASTING DIES

10- 11 DECEMBER, BANGALORE
17 PARTICIPANTS

Die casting is a versatile process for producing engineered metal parts by forcing molten metal under high pressure into reusable steel molds. These molds, called dies, can be designed to produce complex shapes with a high degree of accuracy and repeatability. The pressure die casting (PDC) process is the shortest route from metal to components of light alloys. PDC has replaced many cast iron parts in appliances, automotive and aerospace area. By careful design, it is possible to get strong stiff and yet light weight constructions with PDC. Keeping this in view, IMTMA has organized a 2 day training programme on Design of Pressure Die Casting Dies on 10 - 11 December 2013 at Bangalore.

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SEMINAR ON SALES AND MARKETING OF MACHINETOOLS

19-21 DECEMBER, BANGALORE
19 PARTICIPANTS

A good marketing team represents the face of the company as it needs to project the brand, its key strengths, products and services in order to convince the customers. Being capital equipment, effective marketing assumes far greater significance, specifically in case of machine tools and accessories. Indian Machine tool industry greatly requires systematically

trained marketing engineers who are able to effectively differentiate the products' strengths across to the customer and win more business.

To provide an in-depth understanding of technological aspects as well as best practices of marketing strategies, IMTMA organised a three day technical workshop at Bangalore on "Effective Marketing of Machine Tools".

TRAINING PROGRAMME FOR ASSEMBLY - FITTER SKILLS IN MACHINE BUILDING

23 DEC - 4 JAN
7 PARTICIPANTS

Machine building Industry is facing a serious man power resource crunch and the need for systematic Hands-on training in Machine Building Skills is of paramount importance. Realising the need, IMTMA has setup a training facility for Imparting training in Machine Building Skills to Assembly Technicians including Scraping, sequencing & procedure for structure and small parts sub assemblies, final assembly of the machine ,Intermediate stage Inspection at sub assemblies ,Geometrical Accuracies Testing as per Test chart, Corrective measures etc of CNC Turning Centre & Milling machine.

Indian Machine Tool Manufacturers' Association (IMTMA) conducted a Non-residential 12 day Hands-on training programme for Assembly Technicians in Machine Building Skills (CNC Turning Centres) at Bangalore.

DEFECTS ANALYSIS OF PAINT & POWDER COATING APPLICATIONS

11-12 DECEMBER, PUNE
31 PARTICIPANTS

In today's manufacturing scenario, where shortage of raw material, power & increasing pressure to reduce costs are the order of the day, 'Painting / Coating application' is possibly the most troubled issue. While we are nearly at par with global standards in metal working, we definitely lack in finishing and Powder Coating Applications operations. The stark difference is visible when it comes to exporting our goods. Lack of knowledge in Defect Analysis especially in painting / powder coating and Buck passing between paint or powder suppliers vs. equipment suppliers lead to high rework and rejection rates. Keeping this in view, IMTMA conducted a 2 day Workshop on Defects Analysis of Paint & Powder Coating Applications on 11 - 12 December 2013 in Pune.

FEA / FEM APPLICATION

8-9 JANUARY, BANGALORE
23 PARTICIPANTS

23-24 MAY, PUNE
19 PARTICIPANTS

Engineering Industries in India are faced with many challenges on product design development. Some of them include demands on lower cost of ownership by customers, superior performance, faster time to market and erosion in profit margins. Enhancing product value in terms of functionality has never been more important. Finite Element Analysis has become the mainstay of engineering design and development to accelerate new product development. Companies need to invest in design validation processes and technologies to survive and conquer, considering the global market and the accompanying challenges of opendoor competition. Keeping this in view, IMTMA organized two training programmes on "Product validation through FEA FEM applications" at Bangalore and Pune.

MAINTENANCE OF HYDRAULIC AND PNEUMATICSYSTEMS

16-18 JANUARY, BANGALORE
15 PARTICIPANTS

Hydraulics and Pneumatics systems form the two basic methods of powering the industrial machinery. They form an integral part of any mechanical system and find a variety of applications in the manufacturing industry – right from simple hand tools to sophisticated CNC machine tools. Today, the advent of Electro hydraulics & Pneumatics opened up new fields of application with more challenging tasks in process control. Keeping this in view, IMTMA organized a workshop on "Maintenance of Hydraulics and Pneumatics Systems" 16 – 18 January 2014 at Bangalore.

DESIGN OF WORKHOLDING & FIXTURING

7-8 JANUARY, PUNE
23 PARTICIPANTS

14-15 MAY, DELHI 21 PARTICIPANTS

Design of workholding & fixturing is key to effective utilization of machine tools. Basics of fixture design if not implemented correctly results in poor productivity & quality problems. Set-up time and cycle time reduction, increased accuracy on components, deskilling the job setting operation are the obvious advantages of a good fixture. Competence in workholding & fixturing differentiates excellent organizations. Keeping this in view, IMTMA had organized a 2 day seminar on Design of workhlding and Fixturing.

HANDS-ON TRAINING IN OPERATION OF CO-ORDINATE MEASURING MACHINES (CMMS)

10-14 FEBRUARY
15 PARTICIPANTS

In the modern manufacturing environment, process control and quality assurance depend increasingly on the performance of Co-ordinate measuring machines. Today CMMs have replaced traditional methods of inspection with gages and fixtures thus reducing the time and manpower required in quality control operations. However, thorough understanding of concepts, measuring uncertainty, GD&T, right probing method are very crucial for getting reliable results from any CMM. Keeping this in view, IMTMA organized a comprehensive course with Hands-on training in Co-ordinate Measuring Machines from 10 - 14 February 2014 at IMTMA Technology Centre, Bangalore.

METALLURGY FOR DESIGNERS OF INDUSTRIAL MACHINERY

13-14 FEBRUARY, BANGALORE
16 PARTICIPANTS

Metallurgy pervades the full gamut of engineering product design and processes. It is the basis from which optimum properties for a given design are determined. Component properties must be adequate to ensure the desired product life in complex environments involving wear, corrosion, and elevated temperatures. In the present day of high degree of Quality with low degree of Rejection of products, sound knowledge of Metallurgy is of paramount importance for Designers. This will allow optimum selection of materials in order to achieve a product first time right as well as maintaining the desired quality of the product throughout its life cycle. Towards this objective, a workshop was organized by IMTMA at Bangalore.

PLC PROGRAMMING

19-21 FEBRUARY, BANGALORE
10 PARTICIPANTS

Programmable Logic controller (PLC) represents a key driver in automation, production &process planning in the manufacturing industry. Many industries of today, including packaging, pharmaceuticals, refineries, mines, machine shops, power plants and food industries use PLC systems for automation of their machinery to produce more, consistently, quickly and efficiently. Modern PLC systems can be connected to data networks and interfaced with other automation control devices. However, for improvement / modification of the automation system, correct interpretation of the Logics and changes need to be made to the PLC program as and when required. Taking note of the importance of understanding how typical modern industrial PLC programs work, how to make changes to existing programs and how to create small programs from scratch; IMTMA organized a 3 day Hands-on training programme in PLC Programming & Networking from19 - 21 February 2014 at Bangalore.

APPLICATIONS OF SURFACE FINISHING PROCESSES

21 FEBRUARY, BANGALORE
11 PARTICIPANTS

To ensure reliable performance and prolonged service life of products, its components require to be manufactured not only with high dimensional and geometrical accuracy but also with high surface finish. The surface finish has a vital role in influencing functional characteristics like wear resistance, fatigue strength, corrosion resistance and power loss due to friction. In case of auto components, surface parameters become more and more stringent to meet the norms in terms of noise levels, pollution, etc. necessitating closer control of surface integrity.

Keeping this in view, IMTMA conducted a one day seminar on Applications of Surface Finishing Processes on 21 February 2014 at Bangalore.

METHODOLOGIES FOR INNOVATIVE & SUCCESSFUL NEW PRODUCT DEVELOPMENT

4-5 MARCH, BANGALORE
11 PARTICIPANTS

For survival and growth, every manufacturing firm must periodically introduce New Products, which appeal to customers, with excellent features at affordable costs. To meet this objective, there are several methodologies like Lateral Thinking, Kano's Model, TRIZ, Value Engineering, Design for Manufacturing & Assembly and Quality Function Deployment. For maximum effectiveness, these methodologies should be applied at Product Planning & Design Stage. Keeping this in view, IMTMA organized a workshop on Methodologies for Innovative and successful New Product Development on 4 - 5 March 2014 at Bangalore.

TOLERANCE STACK UP ANALYSIS

11-12 MARCH, BANGALORE
16 PARTICIPANTS

Manufacturing process, productivity and cost are often determined by component tolerances. If components are incorrectly toleranced, it leads to assembly problems. Too tight a tolerance leads to higher cost. Designers are expected to tolerance components optimally. Dimensional variations in production parts accumulate or stack up statistically and propagate through an assembly kinematically, causing critical features of the finished product to vary. Such variations can cause costly problems, requiring extensive rework or scrapped parts. One of the effective tools for managing variations is Tolerance Analysis. Keeping this in view, IMTMA has organized a training programme on "Tolerance Stack-Up Analysis" 11 - 12 Mar'14 at Bangalore.

SPC FOR ENGINEERS AND SEVEN QUALITY TOOLS (7QC)

10-11 APRIL, BANGALORE
13 PARTICIPANTS

Variation in any manufacturing process is inevitable but needs to be controlled. If external or assignable causes of variations are excluded, the natural causes are regulated to a combination of variations due to machines, tools, methods, materials and people who work at the workplace. Statistical Process Control (SPC) is a technique to allow measurement and analysis of the variations at the workplace and try and control the same at optimum levels. While SPC techniques involve extensive use of various types of control charts, an understanding of all the basic seven quality tools helps in a better understanding and implementation of SPC.

Keeping this in view, IMTMA organized a 2 day programme on " Statistical Process Control and Basic 7 QC Tools" on 10 - 11 April 2014 at Bangalore.

BASIC PROGRAMMING OF CNC MACHINING CENTRE

21-25 APRIL, BANGALORE
16 PARTICIPANTS

CNC machines have become the order of the day in every manufacturing industry. These applications are wide spread in mass production units, batch production as well as in tool room industries. Thorough understanding of Programming and Operation of the CNC machines is a must in order to realize the maximum output. This workshop address the programming and operation of CNC Machining centres in detail including finer aspects like control of dimensions, surface finish and optimization of machining parameters. The procedure for safe running of the machine would be dealt along with autonomous maintenance practices. The participants will be trained hands-on in production CNC machines with real time machining exercises. Keeping this in view, IMTMA conducted a 5 days training programme at Bangalore.

TRAINING PROGRAMMES

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PRODUCTIVE UTILIZATION OF CNC GRINDING MACHINES

29-30 APRIL, BANGALORE
9 PARTICIPANTS

Grinding is one of the complex machining processes, which is often the last process in any component machining. The variables in grinding process include the machine, the component characteristics, grinding wheel selection, grinding parameter selection, wheel dressing, coolant & coolant pressure and gauging systems. The grinding process requires a thorough understanding & optimization of these variables. Since grinding is a finishing process, its optimization & effective utilization of grinding machines is of prime importance to reduce & control cost. Keeping this in view IMTMA conducted a training programme on Productive Utilization of CNC Grinding Machines at Bangalore.

CALIBRATION OF CNC MACHINE TOOLS

29 APR, BANGALORE
16 PARTICIPANTS

Machine Tool Calibration is rapidly becoming an essential part of the manufacturing process with customers demanding higher accuracy from machine tools for handling precision parts with tighter tolerances. The ability of a machine tool to perform at its optimum level is largely based on the geometrical and positioning accuracies of the machine slides and guideways. Machine tools are subject to positioning errors which might increase over a period of time due to natural wear and tear or failing parts or worn out moving parts.

Machine tool accuracy affects not only accuracy of parts produced but productivity as well and is often the root cause of component quality issues and hidden costs. Machine Tool Calibration can be performed to check accuracy and track machine capability or performance degradation due to wear. Keeping this in view, IMTMA conducted a one day programme on 'Calibration of CNC Machine Tools at Bangalore.

DEFECTS AND ANALYSIS OF PAINTING AND COATING APPLICATIONS

24-25 APRIL, DELHI
29 PARTICIPANTS

In today's manufacturing scenario, where shortage of raw material, power & increasing pressure to reduce costs are the order of the day, 'Painting / Coating application' is possibly the most troubled issue. While we are nearly at par with global standards in metal working, we definitely lack in finishing and Powder Coating Applications operations. The stark difference is visible when it comes to exporting our goods. Lack of knowledge in Defect Analysis especially in painting / powder coating and Buck passing between paint or powder suppliers vs equipment suppliers lead to high rework and rejection rates. Keeping this in view, IMTMA conducted a two days programme on

Defects Analysis of Paint & Powder Coating Applications at Delhi.

MAINTENANCE AND TROUBLE SHOOTING OF PRESSES

25-26 APRIL, PUNE
30 PARTICIPANTS

The focal point and workhorse of the sheet metal shop is the press and maintaining a reliable press system is essential to face the fierce competition faced by today's press shops. In metal stamping, everything from poor quality parts to accelerated die wear and damage often is caused by poor maintenance. Many fabricators rely on ad hoc maintenance when a machine goes down, with all available resources focused to fix the problem. This approach works most of the time, but at a high cost. Whereas adhering to a press maintenance program leads to cost reduction by decreasing downtime, enhancing machinery output, and establishing a formal recordkeeping system for ongoing inspections. Keeping this in view, IMTMA conducted a 2 days training at Pune.

CALIBRATION OF DIMENSIONAL MEASURING INSTRUMENTS & UNCERTAINTY IN MEASUREMENTS

21-22 MAY, BANGALORE
10 PARTICIPANTS

Obtaining accurate, reliable and traceable measurements is one of the basic requirements in order to achieve required levels of product quality, in any manufacturing activity. No measurement is exact and every measurement is subject to some uncertainty. 'Uncertainty of measurement' is the doubt that exists about the result of any measurement. A measured value is only complete if it is accompanied by a statement of the associated uncertainty.

Measurement uncertainties can occur from the measuring instrument, from the part/component being measured, from environment, from the operator, and/or from other sources. The use of good practice such as traceable calibration, careful calculation, good record keeping, and checking can reduce measurement uncertainties.

Keeping this is veiw, IMTMA conducted a two day programme on "Calibration of Dimensional Measuring Instruments & Evaluation of Uncertainty" on 21 - 22 May 2014 at Bangalore.

ROLL FORMING TECHNOLOGY & ITS APPLICATIONS

23 MAY, BANGALORE
21 PARTICIPANTS

Today, Industries are in look out for more complex shapes, tighter tolerances, pre-punching requirements, high tensile material, and so on. Roll forming addresses the above requirements and is becoming more and more popular among the sheet metal forming industries, with its vast applications in sectors like - Aviation, Automotive, Construction, Oil & Gas, Storage, Furniture and many more. Cold roll forming holds an edge over the other production methods as it is a continuous process eliminating stage production, finishing and sub-assembly operations. It also enables production of complex geometrical shapes with better consistency and accuracy with increased strength due to strain hardening.

In order to address the Roll forming technology, right from design and development of formed products until production practices, IMTMA is organizing a one day seminar on "Roll forming Technology and its applications " at Bangalore.

VISUAL FACTORY / VISUAL MANAGEMENT

27-28 MAY, BANGALORE
22 PARTICIPANTS

26-27 JUNE, DELHI 11 PARTICIPANTS

Visual factory / Visual management refers to how data and information is conveyed at the time and place it is needed, using visual methods such as signs, charts, andons, etc., The visual factory is one of the key concepts of lean manufacturing and it reduces the time and resources required to communicate information verbally or in written form.

With cost being a rising concern today, companies are attempting to reduce cost by improving productivity and work efficiency. Implementing visual factory plays a big role in improving communication and work efficiency . The benefits of having a visual workplace include is that it will improve productivity, safety, quality, on-time delivery, profits and employee morale.

Keeping this in view, IMTMAconducted 2 two days programmes on Visual Factory/Visual Management ; Paving Way for Lean, TQM and TPM Implementation at Bangalore and Gurgaon.

BETTER UTILIZATION OF CNC MACHINING CENTRES

29-30 MAY, BANGALORE 19 PARTICIPANTS

In today's highly competitive market scenario, customers determine the price of a product and entrepreneurs need to continuously fine tune the costs to realize profits. Machine utilization has a major impact in reducing the manufacturing cost of components. Most CNC machines are underutilized with only 20% time effectively spent in cutting & the rest in non-value adding operations. Entire CNC Machining needs to be looked as a holistic system / process, comprising machine tool, cutting tool, work holding, programming, inspection equipment and trained man power in order to improve productivity as well as quality.

Keeping this in view, IMTMA conducted a training programme on Better Utilization of CNC Machining Centers at Bangalore.

TOLERANCE STACK-UP ANALYSIS

27-28 MAY, DELHI 19 PARTICIPANTS

Manufacturing process, productivity and cost are often determined by component tolerances. If components are incorrectly toleranced, it leads to assembly problems. Too tight a tolerance leads to higher cost. Designers are expected to tolerance components optimally.

Dimensional variations in production parts accumulate or stack up statistically and propagate through an assembly kinematically, causing critical features of the finished product to vary. Such variations can cause costly problems, requiring extensive rework or scrapped parts. One of the effective tools for managing variations is Tolerance Analysis. IMTMA conducted a training programme on "Tolerance Stack-Up Analysis" 11 - 12 Mar'14 at Bangalore.

HOW TO IMPROVE ACCURACY OF MACHINE TOOL

20-21 MAY, PUNE
19 PARTICIPANTS

The quality of every component produced on a CNC machine is highly dependent on the machine's performance. The accuracy of machined components would depend upon inherent accuracy of the machine tool as well as the machining system as whole including process, Tooling, Work holding and Programming. One of the major contribution for the machine tool's repeatability and, as a consequence, the accuracy of the parts being produced is the thermal effects generated by internal heat sources or environmental changes. With the proper implementation of direct position measurement feedback systems, on linear and angular axes, most thermal errors in the position loop can be eliminated. Regular testing of the machines using Ball bar and Laser equipment will highlight the present condition of the CNC machines and suitable corrective actions can be followed thereafter. The correct process also plays a vital part in achieving the desired results.

Keeping this in view, IMTMA conducted a 2 day seminar on "How to improve the accuracy of CNC Machines" on 20 - 21 May 2014 at Pune.

EFFECTIVE DESIGN & MAINTENANCE OF PDC DIES

28 MAY, PUNE
18 PARTICIPANTS

High pressure die casting is often the process of choice because of its cost effectiveness and superior quality. The process produces components that have tight dimensional tolerance, good and consistent surface finish and near net shape. It enables manufacturers to make cost-effective small volume runs and is also cost competitive for large production runs Aluminium die cast components have the property of being very light weight with significant mechanical properties and is used extensively in the automotive industry. Keeping this in view, IMTMA organized a one day seminar on "Effective Design and Maintenance of PDC Dies" at Pune.

DESIGN OF GAUGES

3 - 4 JUNE, BANGALORE 32 PARTICIPANTS

When a part is manufactured, it must be measured to ascertain that it is of the right dimensions for fulfilling the purpose for which it is intended. Gauges are one of the commonly used inspection tools in production shops for quick checking and validation of the dimensions of manufactured parts. Thus, Gaging has become an integral part of any machining process and gauges help in ensuring required degree ofinterchangeability among the millions of parts manufactured worldwide. The type and the design of gauges depend on the application, volume of production and precision levels required. Keeping this in view, IMTMA conducted a 2 day programme on "Design of Gauges" at Bangalore.

WORKSHOP ON IMPROVING PROCESS CAPABILITY

12-13 JUNE, BANGALORE 14 PARTICIPANTS

Control Charts and SPC techniques are used by Quality / Process engineers in the Industry for many years, for process control and calculating process capability. Yet there are few myths which need to be discussed and clarified in every practicing engineer's mind. Often this topic is taught / learnt from the standpoint of a statistician or just as a metric. Engineers fail to understand the reasons and the impact of the process variation on the product in a real life scenario; Particularly because data collection and calculation of performance has been simplified and automated today like never before, many engineers have missed on development of an insight and ability to interpret the numerous data around. Software is used but the assumptions not understood. All this results in not getting any real benefits. Keeping this in view, IMTMA organized a 2 day advanced programme on Improving Process capability at Bangalore.

ADDITIVE MANUFACTURING TECHNOLOGIES

26-27 JUNE, BANGALORE 17 PARTICIPANTS

Additive manufacturing throws open newer possibilities for reproducing complex designs in to real objects. Though originally started for prototyping applications, Additive manufacturing has come a long way since then. It plays a key role in robust product development, as the prototype is made directly from CAD thus making possible the Form, Fit and Functional checks at the early stage of design cycle. Today Additive Manufacturing is a promising manufacturing alternative that accelerates production and reduces costs while creating new possibilities and new business models. Keeping this in view, IMTMA conucted a 2 days programme on "Additive manufacturing Technologies" on 26 - 27 June2014 at Bangalore.

LATEST TRENDS IN HEAT TREATMENT AND ADVANCED SURFACE ENGINEERING

12-13 JUNE, DELHI
16 PARTICIPANTS

Heat Treatment is no longer heating and quenching. Metallurgy is the oldest art and science, today's knowledge banks and computerized automation has revolutionized this ancient art into a precise science. Heat treatment forms the core of metallurgy - a vital core because today there are more than 12,000 grades of steels, thus forming the basis for judicious materials selection. Also Thin film super hard coatings are getting well-established in various fields with their major physical properties.

Keeping this in view, IMTMA conducted a 2 day programme on Latest trends in Heat treatment and Advance surface engineering on 12 - 13 June 2014 at Delhi.

SHEET METAL DIE MAINTENANCE

3-JUN, PUNE
39 PARTICIPANTS

Die Tryout and Proving is one of the most important and critical step in the manufacture of Sheet Metal Dies. There are many variables which contribute to the successful completion of this activity. Tool Makers who are responsible for executing this step traditionally learn a lot from Trial and Error methods. After accumulating many years of experience in this activity, they finally begin to exert sufficient command over this domain.Nowadays use of simulation software's have considerably reduced the time taken for this activity. However this activity has to be necessarily fine tuned and the final component produced on the Press. Keeping this in view, IMTMA conducted a three days programme on "Sheet Metal Dies – Tryout and Proving" on 29 September to 1 October 2014 at Pun

TRAINING PROGRAMMES

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ASSEMBLY, WELDING & INSPECTION FIXTURES - DESIGN & MANUFACTURING

10-11 JUNE, PUNE 22 PARTICIPANTS

Fixtures are used in almost all the segments of the engineering industry and are considered to be critical for achieving optimum quality and productivity of various products. Any shortcomings in the design and manufacture of these fixtures have a direct negative impact on the assemblies manufactured.

A well designed and manufactured fixture is the result of a systematic approach which takes into consideration the respective processes and the various design and manufacturing challenges.

Keeping this in view, IMTMA conducted a 2 day workshop on "Assembly, Welding and Inspection Fixtures" on 10 - 11 June 2014 at Pune.

HYDROFORMING AND ITS APPLICATIONS

13 JUNE, PUNE 15 PARTICIPANTS

In the automotive industry, higher acceleration, lower fuel consumption, higher passenger safety is demanded by every customer. Therefore, the automotive industry is left with no option other than to align at a primary focus for high strength but lighter components.

Hydroforming is considered as one of the prominent and niche technologies to deliver lightweight components and offers several advantages.Thus, hydroforming opens up new possibilities in manufacturing a variety of parts for different applications, otherwise considered difficult or sometimes even impossible.

Keeping this in view, IMTMA conducted a one day seminar on "Hydroforming and its applications" on 13 June 2014 at Pune.

APPLICATIONS OF LASER IN MANUFACTURING

20 JUNE, PUNE 18 PARTICIPANTS

The latest trends in Laser-based manufacturing processes include Deep penetration welding, Surface modification (cladding, hardening, alloying and cleaning), Laser milling and specialized laser cutting, including thick section cutting and 3D profile cutting using multi-axis machines. Fibre lasers are relatively new and are much more energy efficient. All these aspects and many more were discussed and debated in a on day seminarconducted by IMTMA on "Lasers in metal working" on 20 June 2014 at Pune.Indian Machine Tool Manufacturers' Association (IMTMA) Design Institute has organized a training programme on "Machine Tool Design – Professional"; 19 August to 30 October 2013, Bangalore. This professional covered basic to advance levels of topics dealing in machine tool design. A complete design of CNC turning center was carried out from scratch to finish. Pre-process activities like design input, conceptualization, Specification, 3D modeling of parts, sub-assemblies and final assembly using popular design CAD tools and preparing the final manufacturing drawings in par with industry standards, Design for Accuracy, Design for Manufacturing and Design for Assembly was addressed during the course. It was highly interactive and hands on training session and covered entire 360 ° view on machine tool design aspects.

MACHINE TOOL DESIGN PROGRAMMES

MACHINE TOOL DESIGN - PROFESSIONAL

19 AUGUST - 30 OCTOBER 2013, BANGALORE, 9 PARTICIPANTS

IMTMA conducted "Machine Tool Design – Professional"programme from 19 August to 30 October 2013, at Bangalore. This professional covered basic to advance levels of topics dealing in machine tool design. A complete design of CNC turning center was carried out from scratch to finish. Pre-process activities like design input, conceptualization, Specification, 3D modeling of parts, sub-assemblies and final assembly using popular design CAD tools and preparing the final manufacturing drawings in par with industry standards, Design for Accuracy, Design for Manufacturing and Design for Assembly was addressed during the course. It was highly interactive and hands on training session and covered entire 360 ° view on machine tool design aspects.

MACHINE TOOL DESIGN – RAPID

02 DECEMBER - 13 JANUARY BANGALORE, 9 PARTICIPANTS

12 MAY TO 21 JUNE, BANGALORE, 12 PARTICIPANTS

Two "Machine Tool Design – Rapid" training programmes were conducted by IMTMA at Bangalore.The courses covered introduction to Design fundamentals, and were focused on machine tool design. A complete design of CNC Turning center was carried out from concept to finish. Pre-process activities like design input, conceptualization, machine specification, 3D modeling of parts, sub-assemblies and final assembly using popular design CAD tools and preparing the final manufacturing drawings at par with industry standards, Design for Accuracy, Design for Manufacturing and Design for Assembly were addressed during the courses.

MACHINE TOOL DESIGN - ELECTRONICS

03 FEBRUARY TO 15 FEBRUARY, BANGALORE, 10 PARTICIPANTS

01 APRIL TO 14 APRIL, BANGALORE, 10 PARTICIPANTS

IMTMA conducted two training programmea on "Machine Tool Design - Electronics"; at Bangalore. It covered introduction to Design basics, electrical elements and was more focused on machine tool electrical design. A complete design of CNC machine was carried out by the participants. Electrical circuit design, control panel design, introduction to PLC programing & ladder diagram, selection of electrical switch gears are prominently discussed during the course.

DESIGN OF FIXTURE - SPECIALIZATION PROGRAMME

Design of fixture is key to effective utilization of machine tools. Basics of fixture design if not implemented correctly results in poor productivity & quality problems. Set-up time and cycle time reduction, increased accuracy on components, deskilling the job setting operation are the obvious advantages of a good fixture. Competence in right fixture differentiates excellent organizations. IMTMA conducted a training programme on "Design of Fixture - Specialization" from 21st April to 5th May 2014, at Bangalore.

ACTIVITIES OF BANGALORE INTERNATIONAL EXHIBITION CENTRE (BIEC)

80TH UFI CONGRESS – SEOUL, SOUTH KOREA

BIEC participated in the 80th UFI Congress, from 12 to 18 November 2013. The congress was held in Seoul, South Korea. Around 400 Exhibition industry leaders from across the world attended the event and utilized the opportunity to share their views to take the industry forward. The focus of the 2013 UFI Congress, 'Managing for the future', explored issues facing tomorrow's exhibition industry.

UFI is the global association of the exhibitions and events industry and is the most important global association outside of North America.

BIEC HOSTS INDIA'S FIRST 'UFI OPEN SEMINAR IN ASIA'

India's First ever 'UFI Open Seminar in Asia' was held at Bangalore International Exhibition Centre (BIEC) from 6–7 March 2014. It was a proud moment for the Indian Exhibition industry to witness the conglomeration of global exhibition organizers at one place. 150 delegates from 15 countries including India participated in the seminar. UFI has more than 20 Indian members including BIEC.

This first ever UFI event in India has made the global exhibition industry to look at India as the future destination for organizing world class exhibitions and boost industry initiatives on overall quality, customer happiness, technology and sustainability.

IEIA TRAINING ON KEY ASPECTS OF EXHIBITION ORGANIZATION

One day training programme on 'Key aspects of Exhibition Organization' was conducted by Indian Exhibition Industry Association (IEIA) at India Habitat Centre - New Delhi, on 21 May 2014.

The training was organized to train the existing and future trade professionals so that they could hone management skills, increase productivity and improve the image of their respective shows. A total of 49 delegates attended the Delhi training programme where BIEC was one of the sponsors. A similar programme was organized at Mumbai on May 23, 2014.

WORLD MACHINE TOOL SCENARIO

Dollar volume production of machine tools around the world during 2013 dipped by 9%. Output by the 28 principal producing countries was $68.64 billion. That represents a decline from 2012's $75.4 billion, Most major producers had relatively small percentage changes in their output. Among the larger gainers were Germany with a 6% increase; the Italy with a 2% improvement; Spain, 11%; and the Austria with 9% growth. Other countries declined in production, including Japan, China, US and the United Kingdom.

Germany saw an increase of 6% in output in 2013 remains by far the largest maker of machine tools. Japan ranks second, with 32% decrease in production from the year before, and it is followed by China. The output from those top three account for 52% of 2013's total world shipments measured in this survey. The United States, still sixth in output.

The largest consuming country in the world continues to be China, which installed $11.3 billion worth of machine tools. On a per-capita basis, consumers Switzerland, South Korea, Germany and Taiwan top the list.

Based on the Gardner's machine tool consumption survey report 2014 India's position in the world during 2013 is 11th in Consumption, 16th in production.

PRODUCTION OF MACHINE TOOLS

Global Machine Tool estimated production amounted to USD 68.6 Billion during 2013 a decline of 9% from revised USD 75.4 Billion during 2012. India Production now occupies 16th position in the world compared to 13th position during 2012. Top five countries are Germany (21%), Japan (18%), China (13%), Italy (8%), & Korea (7.7%) Top 3 countries accounts for 52% of the global output.

CONSUMPTION OF MACHINE TOOLS

Global consumption of machine tools amounted USD 54.4 Billion during 2013 had decreased by 9% from revised USD 59.4 Billion during 2012. China which occupies top position accounts for 21% of the world's consumption. Top 5 consuming countries are China (21%), US (15%), Germany (13%), Korea (8.2%) & Japan (7.7%) India with about 2.6% global share occupies 11th position in the world compared to 6th position during 2012.

Global Machine Tool Production

Value in Million USD

	Country	2012	2013	Change
1	Germany	13824.9	14687.7	6%
2	Japan	18231.3	12326.4	-32%
3	China	9236.7	8743	-5%
4	Italy	5606.1	5710.4	2%
5	South Korea	5485	5306	-3%
6	United States	4983.2	4956.1	-1%
7	Taiwan	5414	4537	-16%
8	Switzerland	3282.2	3129.1	-5%
9	Spain	1095.1	1218.6	11%
10	Austria	1000.1	1094.3	9%
11	United Kingdom	911.7	891.7	-2%
12	Canada	752.2	803.4	7%
13	Turkey	644.2	709.2	10%
14	Czech Republic	720	705.6	-2%
15	France	752.2	686.6	-9%
16	**India**	**798**	**658**	**-18%**
17	Brazil	643.3	420.1	-35%
18	Netherlands	402.5	415.7	3%
19	Mexico	389.4	374.4	-4%
20	Belgium	304.7	324	6%
21	Russia	263	210.9	-20%
22	Sweden	201.9	208.5	3%
23	Finland	187.7	184.6	-2%
24	Australia	148	160	8%
25	Portugal	70.7	74.4	5%
26	Denmark	70.7	73	3%
27	Argentina	39.7	43.1	9%
	Total	**75,485**	**68,651**	**-9%**

Source: Gardner Business Media, Inc

WORLD MACHINE TOOL SCENARIO IN 2013

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Global Machine Tool Consumption

Value in Million USD

	Country	2012	2013	Change
1	China	12,950.60	11,364.50	-12%
2	United States	8,835.40	8,039.80	-9%
3	Germany	6,515.40	7,065.00	8%
4	South Korea	4,464.00	4,476.00	0%
5	Japan	5,914.80	4,196.50	-29%
6	Mexico	2,070.70	2,245.60	8%
7	Italy	2,072.30	2,078.30	0%
8	Russia	1,934.80	1,711.90	-12%
9	Brazil	1,883.20	1,674.00	-11%
10	Taiwan	1,840.70	1,629.00	-12%
11	**India**	**2,167.50**	**1,441.00**	**-34%**
12	Turkey	1,343.50	1,399.70	4%
13	Canada	1,052.00	1,099.70	5%
14	Switzerland	1,053.30	1,079.00	2%
15	France	1,044.00	1,000.00	-4%
16	United Kingdom	1,069.30	954.2	-11%
17	Austria	624.1	585.6	-6%
18	Spain	392.3	419.8	7%
19	Czech Republic	430.5	419.7	-3%
20	Netherlands	399.4	394.4	-1%
21	Sweden	333.3	268.3	-20%
22	Argentina	274.1	220.2	-20%
23	Australia	187.7	206	10%
24	Portugal	172.5	130.1	-25%
25	Finland	158.2	118.2	-25%
26	Belgium	223.1	116.9	-48%
27	Denmark	84.3	75.7	-10%
	Total	**59,491**	**54,409**	**-9%**

Source: Gardner Business Media, Inc

TRENDS IN INDIAN MACHINE TOOL INDUSTRY

Production of Metal Working Machine Tools

All Values in Rs. Crores

	2011-12		2012-13		2013-14	
Machine Tool Segments	Qty	Value	Qty	Value	Qty	Value
Metal Forming	**3021**	**504**	**1383**	**565**	**1027**	**508**
CNC	1733	332	820	376	560	328
Conventional	1288	172	563	189	467	180
Metal Cutting	**16137**	**3795**	**12528**	**3320**	**11529**	**2973**
CNC	13265	3249	9761	2811	9681	2601
Conventional	2872	547	2767	509	1848	372
Total Metal Working	**19158**	**4299**	**13911**	**3885**	**12556**	**3481**
CNC	14381	3581	10580	3187	10241	2929
Conventional	4160	718	3330	698	2315	552

Note: Production turnover adjusted to reflect the data of the companies outside IMTMA database

Export of Metal Working Machine Tools

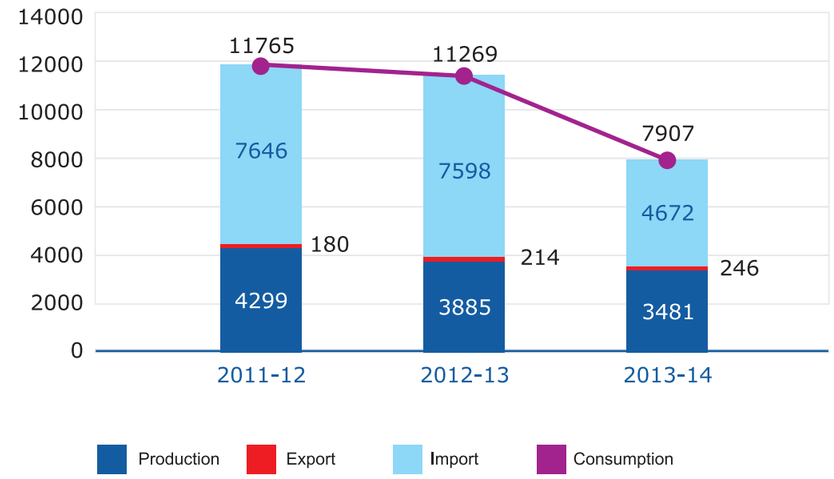
All Values in Rs. Crores

	2011-12		2012-13		2013-14	
Machine Tool Segments	Qty	Value	Qty	Value	Qty	Value
Metal Forming	**54**	**23**	**56**	**102**	**35**	**117**
CNC	27	16	34	70	13	82
Conventional	27	7	22	32	22	35
Metal Cutting	**529**	**157**	**449**	**113**	**422**	**129**
CNC	425	128	417	104	378	110
Conventional	104	29	33	8	44	19
Total Metal Working	**583**	**180**	**505**	**214**	**457**	**246**
CNC	452	144	450	174	391	192
Conventional	131	36	55	40	66	54

Note: Export turnover adjusted to reflect the data of the companies outside IMTMA database

Indian Machine Tool Industry 2011-12 to 2013-14

All Values in Rs. Crores



Note: Production and Export turnovers adjusted to reflect the data of the companies outside IMTMA database. Exchange Rate used 2011-12=Rs.45, 2012-13=Rs.55, 2013-14=Rs.63

NEW PRODUCTS DEVELOPED BY MEMBERS (2013-14)

APEX INDUSTRIES

1. Hydraulic Machine Vices

ARSUN ENGINEERS

1. Portable CNC Cutting Machine - Oxy fuel / Plasma, Cutting capacity - 2500x1300mm
2. Portable Radial Drill with Universal Drill Head - Model 'ARSUN' UR50 - drilling capacity 50mm

ASHOK MANUFACTURING COMPANY PRIVATE LIMITED

1. Robotic palletising of battery lead sheets.
2. Robotic system with auto compliance for grinding hand tools
3. Robotic grinding and polishing systems sheet metal parts, castings.

BENCO THERMAL TECHNOLOGIES PRIVATE LIMITED

1. Rotary Carburising Furnace with multi-functional capability - 1.6mm case depth in the range of 300-500 kgs/Hr.

BHAGWANSONS

1. CNC-200 Six axis grinding machine

BHARAT FRITZ WERNER LIMITED

1. Vertical Machining Centre (Models : BMV45++, BMV60++, BMV65+ and BMV70+)
2. Horizontal Machining Centre (Ram type, Model : H 400MCR)
3. Vertical Turning Centre (Models : BVL 550H & BVL 700H)
4. SPM - Travelling Column 9 axes Flexible machine.

BOMBAY TOOLS SUPPLYING AGENCY

1. 2D inclination measuring instrument - BlueLEVEL-2D

COSMOS IMPEX (I) PRIVATE LIMITED

1. Vertical Machining Centre (Model: CVM-1060)
2. Grinding Machine (Model: E 7040)

DROPCO MULTILUB SYSTEMS PRIVATE LIMITED

1. Gravity Grease Feeders (Models : DGF-250,500 & 1000)

DUCOM INSTRUMENTS

1. Intermittent loading Pin-on-Disc, High temperature Pin-on-Disc
2. Tool chip Tribometer, Metal forming Tribometer, & Multistation Bio-Tribometer
3. Rolling contact fatigue test rig, Journal Bearing test rig
4. Multispecimen tester, Tribo corrosion tester, Advance Air jet Erosion Tester & Advance scratch tester
5. Roller on Roller
6. Bio Cube
7. Humidity generator, Advance humidity generator
8. Reciprocatory friction monitor
9. Advance Air jet Erosion Tester
10. ABI version-III

ELSCINT AUTOMATION

1. Vibratory Bowl Feeders
2. Auto Loading System for long length shafts for Centerless Grinding Machines
3. Vibratory Feeders for feeding of rivets in 4 rows
4. Vibratory Counting & Dispensing System for Ear Plugs

ETA TECHNOLOGY LIMITED

1. 10T Friction Stir Welding Machine
2. Measuring and Lapping Machine for Automotive Synchronizer Rings
3. 50kN Ball Joint Endurance Test Rig, 5 - Axis

FERROMATIK MILACRON INDIA PRIVATE LIMITED

Plastics Processing Machinery:

1. Two Platen Maxima Servo Power Machine – 1000T & 1800T
2. All Electric Machine - Elektron 550T
3. Omega Three color machines – 550T

HI-LIFE MACHINE TOOLS LIMITED

1. Completely Automatic CNC Cylindrical Grinding Machines operated by a 7 axis Robot.
2. Automatic Loading & Unloading System with 3 axis Robotic Arm
3. Automatic Loading & Unloading System for Engine Valves, for Centerless Grinding Machine

IND-SPHINX PRECISION LIMITED

1. Lollypop Ball End Mill.
2. Thread Mill Cutter
3. Ultra Micro Drill 0.030 - 0.050mm
4. CFRP Routers ø3.00 - ø16.00mm (Diamond Coated)

INLAND MACHINE TOOLS

1. Roller Screw

INSPECS METROLOGY (INDIA) PRIVATE LIMITED

1. 1D Height Gauge with hand wheel movement - Optima X.
2. Video measuring machines - CNC machine with CNC controller.

ITL INDUSTRIES LIMITED

1. ITL- FCS-CNF-120 - Burr Free Cold Saw & Friction saw Fly Cut off (Dual shuttle type)
2. Fully Automatic PLC controlled Horizontal Double Column LMGNC type Bandsaw Machine.
3. Double Column LMG Based Swivelling-Head Type Mitre Cutting Bandsaw Machine.
4. Vertical Bandsaw Machine – Heel Cutting / Sample Cutting machine.
5. High Speed Numerical Controlled Circular Sawing Machines with Auto Loader
6. Carbide Circular Sawing Machine with Numerically Controlled AC Servo Driven for Bar Indexing and Saw Feed Features.

JASH PRECISION TOOLS LIMITED

1. Vibration Isolation Work Table.

NEW PRODUCTS DEVEOPLED BY MEMBERS

KAWA PRESS SYSTEMS PRIVATE LIMITED

1. 200 Ton 4 Pillar Hydraulic Deep Drawing Press
2. 200 Ton High Speed Stamping Line

KRISTEEL - SHINWA INDUSTRIES LIMITED

1. Bore Gauge – ACF 1-15 mm (Model: 1511 ACF)
2. Drill Gauge (30 Holes) Metric – 1.5 mm to 12.5 mm (Model : 1513-C)
3. Circumference Gauge (Model : 1515 I, 1515 J, 1515 K, 1515 L, 1515 M, 1515 N, 1515 O, 1515 P)
4. Plain Vernier Caliper with Fine Adjustment Monoblock (Model : 2914 & 2915)
5. Digital Vernier Caliper (Model : 2916 & 2917)
6. Digital Height Gauge (Model: 2918 & 2919)
7. Hi – Lo Welding Gauge
8. 12 Leaves Weld Gauge Cum Radius Gauge Set
9. Pipe Pit Gauge
10. Tyre Depth Gauge – Big (0-100 mm)
11. Trapezoidal Screw Pitch Gauge – 4 to 12 TPI (8 leaves)
12. Folding Rule with Angle Calculation Chord 600 mm (Model: 1211)
13. Gear Tooth Pitch Gauge (Model: GTPG–2722, GTPG–2813, GTPG-3115, GTPG–2666, GTPG–3121, GTPG–3122, GTPG–3123, GTPG–3124)
14. V Pulley Gauge set of A, B, C & D
15. Chamfer Gauge Size 0.5 to 5.0 (18 leaves) (Model: 3125)
16. Wet Film Thickness Gauge 1 to 80 mil (Rectangular) (Model : WFTG - 3126)
17. Sliding T- Bevel Gauge 6" size 4"base (Model: SB – 3341)
18. Pen Shape Scriber (HSS TIP) (Model: PSS – 3227)

MITSUBISHI HEAVY INDUSTRIES INDIA PRECISION TOOLS LIMITED

1. Full form relieved Spline Broaches.

PRECISION MACHINE TOOL

1. CNC Cylindrical Grinding Machine, Centerless Grinding Machine
2. CNC Thread Grinding Machine

PREM BROTHERS

1. Multiple use Small Belt Grinding Machine 6"x 48" 0.75 KW/1 HP developed in 2 Speed.
2. Table type Disc Grinder 150 dia 0.5 /0.75 HP.
3. Down Draft Work Tables - size 48" x 32".
4. Floor type Work Table - size 32"x 18".
5. Dust Collectors (Model - FC-1)
6. Small Radius Grinding Attachment for Belt Grinders for Turbine Blades.

PROTECK MACHINERY PRIVATE LIMITED

1. Oil hole drilling machine with high versatility.

RATTAN HAMMERS

1. Hot Forging Presses 400-600-800 & 1000 Tons Capacity Steel Fabricated Body with PLC Control.
2. Roll Forging Machine Model RF-140-RF180 & RF220 with Pneumatic Clutch.
3. Bar Cropping Machine 50 MM- 75 MM & 100 MM Cutting Capacity with Auto Loader & Feeder with PLC Control.

NEW PRODUCTS DEVEOPLED BY MEMBERS

SAHAJANAND LASER TECHNOLOGY LIMITED

1. Hallmark 4G Diamond Processing Machine,
2. Lotus diamond scanning & planning machine,
3. Comet Diamond Scanning, inclusion & planning machine,
4. Vector fiber laser cutting machine,
5. Future X fiber laser cutting machine,
6. infinity fiber laser cutting machine,
7. Optibend press brake.
8. Axifiber large format laser marking machine

SCHUNK INTEC INDIA PRIVATE LIMITED

1. TRIBOS-Mini HSK-E 20 Polygonal Tool Holder
2. Power Cubes: The PR 2, PDU 2 and PSM 2 intelligent mechatronic modules

SOLITAIRE MACHINE TOOLS LIMITED

1. Micro Centerless Grinder (Work Diameter Range - 0.1 mm to 10 mm)

STATE ENGINEERING CORPORATION

1. Ball Lock Chuck & Pull Down Chuck

TAEGUTEC INDIA LIMITED

1. Chamfering rings for drilling line (Drill Rush, Top Drill & T-Drill).
2. Rhino Rush line to include wedge clamping holders and boring bars; new chip breaker geometries; four-cutting-edge insert etc.
3. Hard Mill – a High Performance Solid Carbide End Mill
4. Top Slot - New Slotting Line with 3-edge Mill Grooving Inserts
5. Heavy Mill 60 – face milling cutter for steel and cast iron.
6. Mill2Rush to include WNGX08
7. Positive helical 3-cutting-edge insert - TPKT1605.

THK INDIA PRIVATE LIMITED

1. Caged roller LM Guide SRG85, 100 model
2. Electronic actuator compact series KRF model
3. Electronic actuator economy series ES/EC +TSC model
4. Electronic actuator universal series US model
5. LM Bush LMI, LMC model
6. High- Speed ball screw SBK / SBN Model

VADDIGIRI FACTORY AUTOMATION PRIVATE LIMITED

1. Flexible CNC Horizontal Special Purpose Machine
2. Flexible CNC Vertical Special Purpose Machine

ANNUAL REPORT 2013-2014

NEW MEMBERS ENROLLED DURING 2013-2014

A INNOVATIVE INTERNATIONAL LIMITED

307, 3rd Floor, Sampada
Behind Tulsi Complex
Mithakhali Six Road, Navrangpura
Ahmedabad - 380 009
Gujarat
(Manufacturer - Sawing & Cutting Off Machines)

ABHIYANT TECHNOLOGIES PRIVATE LIMITED

#22, 1st Cross, Thigalarapalya
Main Road, Near Peenya 2nd stage
Bangalore - 560 058
Karnataka
(Manufacturer - Tool room products including Press Tools, Moulds, Jigs & Fixtures etc.)

ACCURATE GAUGING & INSTRUMENTS PRIVATE LIMITED

Gauge House, 67
Hadapsar Industrial Estate
Pune - 411 013
Maharashtra
(Manufacturer - Measuring & Checking Instruments)

AVI OILLESS DIE COMPONENTS (INDIA) PPRIVATE LIMITED

Gat No. 697, 734, 735
At Post Velu
Pune – Satara highway, Tal Bhor
Pune - 412 205
Maharashtra
(Manufacturer - Tool room products including Press Tools, Moulds, Jigs & Fixtures etc.)

BHAGWATI ENGINEERS

Maruti Industrial Area
Gondal Road, Near Octrol Point
Rajkot - 360 004
Gujarat
(Manufacturer - Punching or Notching Machines including Combined Punching & Shearing Machines, Presses, Other Metal Forming Machines)

COLTON INDUSTRIES

No. 17, K. G. Halli
Jalahalli West
Bangalore - 560 015
Karnataka
(Manufacturer - Machinery & Apparatus for soldering, Brazing or Welding)

DELTA TAU DATA SYSTEMS INDIA PRIVATE LIMITED

Shop B-2, Yakshanagari Society
221, Kothrud
Pune - 411 038
Maharashtra
(Importer of Machine Tools - Diamond Cutting Tools, Motion Controllers & Abrasive Honing tools)

DIPKALA ENGINEERING WORKS

Gondal Road Highway
Behind Parin Furniture
Rani Industrial Area
Plot No-51 Vavdi
Rajkot - 360 004
Gujarat
(Manufacturer - Sawing & Cutting Off Machines)

DUTCH TECH TOOLS PRIVATE LIMITED

Office No. 13, 2nd Floor
21, Ballygunge Circular Road
C.P.C Office Complex
Kolkata - 700 019
West Bengal
(Manufacturer - Cutting Tools, HSS/Carbide/Ceramic/CBN)

EXCEL

H-60, MIDC, Waluj
Aurangabad - 431 136
Maharashtra
(Manufacturer - Honing & Lapping Machines, Gear cutting, Gear Grinding or Gear Finishing Machines, Grinding Machines, Punching or Notching Machines Equipment / Bonded & Coated Abrasives)

HELLER INDIA PRIVATE LIMITED

Trasala Crest, 2nd Floor
Behind Titan Shop
D3/5 MIDC, Mumbai – Pune Road
Chinchwad
Pune - 411 019
Maharashtra
(Importer - Horizontal Machining Centres)

KJK MEISTERHONEN PRIVATE LIMITED

#168, 1st Main Road
Nehrunagar
Industrial Estate, Kottivakkam
Chennai - 600 041
Tamil Nadu
(Manufacturer - Parts & Accessories for Machine Tools including systems, attachments, accessories, Components & Parts)

MASTER FLUID SOLUTIONS (INDIA) PRIVATE LIMITED

B 41
Chakan Industrial Area Phase – 2
Village: Bhambuli, Post: Vasuli
Tal: Khed
Pune - 410 501
Maharastra
(Manufacturer - Sawing & Cutting Off Machines / Cleaning & Finishing Equipment)

MITSUBISHI ELECTRIC INDIA PRIVATE LIMITED

Emerald House
EL-3, J Block, MIDC Bhosari
Pune - 411 026
Maharashtra
(Manufacturer - Machines & Appliances for Testing Metals, Machines & Appliances for Testing Metals, Machines & Appliances for Testing Metals)

THK INDIA PRIVATE LIMITED

No.4/4, 2nd Floor, 1st Main Road
Industrial Town
West of Chord Road
Service Road, Rajajinagar
Bangalore - 560 044
Karnataka
(Distributor - Linear Motion Systems)

YANTRANG PRECISE

NH – 8B, Gondal Road
Govind Bag, Kothariya
Rajkot - 360 006
Gujarat
(Manufacturer - Bending, Folding, Straightening or Flattening Machines (including Press Brakes)

Total Membership of IMTMA as on June 2014 : 492 members

IN THE NEWS


IMTEX FORMING 2014
"IMTEX FORMING 2014" Exhibition to be held from 23rd to 28th January 2014
"IMTEX FORMING 2014" Exhibition to be held from 23rd to 28th January
IMTEX expo to feature recent innovations & technologies
"IMTEX FORMING 2014" Exhibition to be held from Jan 23
Machine tools expo opens
Indian Machine Tool Industry sustains performance in tough times
பன்னாட்டு தொழில்நுட்ப பொருட்காட்சி
பொறியியல் பொருட்காட்சி
इंडियन मशीन टूल उद्योग ने मुश्किल समय में भी शानदार प्रदर्शन को बनाए रखा है
பொறியியல் பயன்பாட்டுக்கான சாதனங்களின் பன்னாட்டு கண்காட்சி
ਇੰਡੀਅਨ ਮਸ਼ੀਨ ਟੂਲ ਉਦਯੋਗ ਨੇ ਔਖੇ ਸਮੇਂ 'ਚ ਵੀ ਸ਼ਾਨਦਾਰ ਪ੍ਰਦਰਸ਼ਨ ਨੂੰ ਬਣਾਈ ਰੱਖਿਆ
IMTEX
THE HINDU
400 நிறுவனங்கள் பங்கேற்கும் பொருட்காட்சி
इंडियन मशीन टूल मैन्यू. एसो. द्वारा प्रदर्शनी 23 से
IPF
Internationally Acclaimed India's largest biennial
bition showcasing the exhaustive range of forming
echnologies in all engineering applications
Bangalore
இம்டெக்ஸ் பொருட்காட்சி