



Annual Report 2011 - 2012



Indian Machine Tool
Manufacturers' Association

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EXECUTIVE COMMITTEE 2011 - 2012



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President

Mr. Vikram Sirur
Executive Chairman
Miven Machine Tools Limited.

Vice President

Mr. L. Krishnan
Managing Director
TaeguTec India Private Limited.

Members

Mr. Syed Amjed

Sr. Vice President - Marketing
Bharat Fritz Werner Limited.

Mr. Indradev Babu

Managing Director
Uday Computer Aided Manufacturing
(Private) Limited.

Mr. Satish Godbole

Vice President - Motion Control Systems
Siemens Limited.

Mr. Santanoo Medhi

Managing Director
Kennametal India Limited.

Mr. Vikram Vilas Salunkhe

Managing Director
Accurate Engineering Company Private Limited.

Mr. Deepak S. Shrivastava

Executive Director
Electronica Machine Tools Limited.

Mr. N. Umesh

Vice President & Business Head - Industrial
Equipment Division
Bosch Limited.

Mr. Ghanshyam Agrawal

Director
Nagel Special Machines Private Limited.

Mr. Rupesh Mehta

Managing Director
Macpower CNC Machines Private Limited.

Mr. Asit Joshi

Sr. Vice President
Batliboi Limited.

Past Presidents

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.



EXECUTIVE COMMITTEE 2011 - 2012

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Co-opted Members

Mr. D. D. Mulherkar

Vice President - Machine Tool Division
Premier Limited.

Mr. Praful Shende

President
Vigel Manufacturing Technologies.

Invitees

Mr. A. P. Arya

Managing Director
TAL Manufacturing Solutions Limited.

Mr. N. K. Balgi

Director
Ferromatik Milacron India Private Limited.

Mr. S. Elango

Executive Director
Galaxy Machinery Private Limited.

Mr. Parakram G. Jadeja

Chairman and Managing Director
Jyoti CNC Automation Private Limited.

Mr. Achal Nath

Executive Director
Ashok Manufacturing Company Private Limited.

Mr. Rajendra S. Rajamane

Chairman - 'UDAAN' &
Managing Director
Rajamane Industries Private Limited.

Mr. T. K. Ramesh

Chief Executive Officer
Micromatic Machine Tools Private Limited.

Mr. Aditya Ratnaparkhi

Deputy Chairman - 'UDAAN' &
General Manager (Production)
Electronica Mechatronic Systems India Private
Limited.

Mr. R. D. Madan

President - Corporate Planning
ISGEC.

Mr. G. K. Pillai

Chairman and Managing Director
Heavy Engineering Corporation Limited.

Secretary and Executive Director

Mr. V. Anbu



Cutting Across Uncertainties

2011 - 2012 was a clear instance of 'almost there, yet so far'. The start was promising for the Indian economy – given upbeat conditions in several key sectors in the previous year. But, as the year progressed, fallouts of uncertainty became more pronounced – runaway inflation; high deficits; restrictive lending rates; low business sentiments; downcast market forecasts; depreciating Rupee; gloomy global trade; downgrade by international rating agencies; and beyond all; crisis of confidence in institutional frameworks.

For Indian manufacturing, this was to have been a water-shed year – given that 2009-2010 had a lot to do with resurgence from the global slowdown in the previous year. Armed with forecasts of high growth, a slew of investments and new project

proposals were announced in almost all segments. The optimism was short-lived. Tighter monetary regime together with a Euro-zone crisis seemed to change the buoyancy towards the end of 2011-2012. The industry fared marginally better than the meltdown phase of 2008-2009.

As it stands, 2012 is expected to be a year of hardship for the economy and consequently for its industry, unless some urgent and focused measures are put in place by policy-makers.

The 12th Five-Year Plan, is one of the most eagerly-awaited initiatives. A comprehensive roadmap for the nation, its economy and specifically for the Indian industry, over the next five years. This report can truly be described as an all 'inclusive' effort. It



FOREWORD

is perhaps the first time in the history of Five-year Plans that government and industry have worked in partnership to bring back the phase of + 9.0 % GDP growth for India.

Governmental Interface

Specifically for Indian capital goods, the 12th Five-Year Plan is expected to pitchfork a key enabling role for this industry sector. **As outlined by a 'Working Group' on "Capital Goods & Engineering Sector" for the 12th Five-Year Plan, this strategic sector is envisaged to leapfrog from current level of Rs. 2,67,944 crore to Rs. 6,81,000 crores by 2016-2017.** Icing on the cake is that of a vision to double employment opportunities, five years down the road.

In order to achieve this humungous objective the 'Working Group' has suggested a concerted focus on technology, R&D and skill development initiatives, besides a host of other segment-specific measures.

It was a matter of pride that IMTMA was represented in the 'Working Group' and played a pivotal role in framing multifarious recommendations for further growth and competitiveness of the Indian capital goods industry. For the machine tool industry in specific, the 'Working Group' has put together the following set of suggestive policy initiatives –

- ▶ Machine Tool Parks : for an integrated development of the entire industry – a model successfully followed in other countries such as Taiwan.
- ▶ Common Facility Centres : offering heavy and high precision machining services to the entire manufacturing industry.
- ▶ Technology Development Fund : to support technology / product development in metalworking machine tools and manufacturing solutions.
- ▶ Revolving Corpus Fund : at low interest rate to promote investments (both expansion and fresh) in machine tools.
- ▶ Acquisition of Overseas Firms : preferably through a joint venture with private companies to acquire technology, products and markets.
- ▶ Customs Duty Reduction on Critical Components : to zero per cent on all key

inputs for CNC machine tools, which are not manufactured in India.

IMTMA has been proactive in its efforts to liaise with all key functionaries in India's policy-making institution. Over the last one year, your Association has held meetings with Prime Minister's Office, Planning Commission, National Manufacturing Competitiveness Council as also with the Ministries of Finance, Heavy Industries & Public Enterprises as well as Commerce & Industry.

We had the opportunity to interact with Mr. Praful Patel, Honourable Minister for Heavy Industries & Public Enterprises; Mr. Arun Maira, Honourable Member of Planning Commission; and Dr. Chidambaram, Honourable Principal Scientific Advisor to Government of India. It was also a matter of privilege that I (as President of IMTMA) got an opportunity to present our industry's perspective to the "Parliamentary Standing Committee on Industry". It was extremely encouraging for us to learn about the importance being attached to the Indian machine tool industry by all these key dignitaries, including our Members of Parliament.

Association Initiatives

Going beyond, **your Association has already taken concrete steps to forge a common understanding amongst several machine tool manufacturers to initiate a 'Machine Tool Park (South)'**. In this unique project, we have a true partner in progress – Government of Karnataka, which has agreed to allocate land at Vasanta Narasapur in Tumkur District of the State. **We invite the membership to actively participate in this very major initiative, which would add tremendous value in our expansion efforts.**

Your Association has been in the forefront of kick-starting a slew of other unique activities for benefit of the entire Indian manufacturing. IMTMA has launched a 'Machine Building Skills Centre' where focused training will be imparted to help persons acquire specialised skills for all machine building industries.

The other popular skill-enhancing course, 'IMTMA Finishing School' has witnessed 'full house' participation from across industry-sectors. There is a growing pressure to replicate this course and concept in West and North India – an agenda for the Association in next couple of years.

The entire gamut of skill development has acquired prime importance within your Association. In 2011-2012, IMTMA conducted almost 150 training programmes on a wide range of productivity; quality and reliability aspects in manufacturing. **We achieved a scale of 9,000 training man-days in the year that went by.** IMTMA has set itself a target to achieve 25,000 training man-days over the next four to five years.

That apart, your Association has kept up the tempo of organising other key events— designed to benefit the membership at large and in particular the customers of machine tool manufacturers. The last one year has been witness to large mega initiatives such as Productivity Summit, Machine Tool Industry Summit and the International Seminar on Forming Technologies. Our vision is to make 'Productivity Summit' the apex industry-event and a platform to recognise best productivity practices that enable manufacturing excellence.

Trade Fair Focus

The second forming technology exhibition from the IMTEX stable – IMTEX FORMING 2012 along with Tooltech 2012 dominated the exhibition focus of the Association in the last one year. The experimentation of creating two niche fairs out of IMTEX has only led to a more exclusive approach for both – exhibitors and business visitors.

The other major initiation was the second-edition of MODERN MACHINE SHOP in Greater NOIDA. MMS 2012 was an attempt to bring together under one roof the entire array of machines, equipments, products and services for better shopfloor modernisation. The third MODERN MACHINE SHOP in 2013 will be held sequentially in three cities – Delhi, Mumbai and Chennai.

The other key activity undertaken by your Association was an 'IMTMA CEOs Delegation to Korea and Taiwan' in April 2012. **Visits to some of the finest machine tool companies and technology institutions in Republic of Korea and Taiwan (ROC) were clearly an 'eye-opener' – with opportunities galore of replicating some of the successful case models.**

The last one year also witnessed the resurrection of the three Regional Councils of IMTMA – in the north, west and south as also the "UDAAN" group.

IMTMA and the Executive Committee have a lot of expectations from these primary groups within the Association.

BIEC

2011-2012 was a momentous year for IMTMA's apex endeavour – BIEC. With more than 25 major trade fairs and mega-events, including the prestigious 'Global Investors Meet', BIEC is today recognised as a key destination for industrial expositions in India.

Future Thrust

The next one year is likely to be rather taxing for the Indian industry, in particular for the capital goods sector. Given the unease of economic conditions at present and further with tepid monsoon in large parts of the country, pessimism in market demand is likely to stay put.

In such scenarios, **Indian machine tool industry would better need to prepare itself to equally focus on other potential sectors – aerospace, energy and healthcare, for enhancing competitiveness.** Servicing these 'sunrise' industries would also be one of the major avenues to enhance our market share so as to reach the targeted level of 50 % by 2016-2017.

Felicitation

2011-2012, for me, was a year of reckoning as I took the office of Presidency. I share the achievements of your 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 the renewed support from all quarters in future as well, especially in carrying out the tasks outlined for the Association in the year ahead.

Vikram Sirur
President



65TH ANNUAL SESSION OF IMTMA



The 65th Annual Session of Indian Machine Tool Manufacturers' Association (IMTMA) was held on 08 September 2011 at the Bangalore International Exhibition Centre (BIEC).

Delivering his annual address, IMTMA President, Mr. M. Lokeswara Rao expressed optimistic views on the growth of Indian Machine Tool Industry in the coming years. He estimated that the share of the domestic manufacturers in the Indian machine tool market will increase to 50% by 2016-2017, as against 35% in 2010-2011.

Talking about the 12th Five Year Plan, Mr. Rao envisioned increasing the share of the manufacturing sector in India to 25% of the GDP from the existing 16%, by the year 2025. By then, the manufacturing sector would have generated an additional 100 million jobs. The vision also includes increasing "depth" in manufacturing with focus on the level of domestic value addition. He also mentioned that the major emphasis of the machine tool industry in the 12th Five-year Plan would be on technology.

Mr. Rao said that some of the major parameters to be achieved include development of high precision machine tools; multi-axes, multi-function machines; heavy duty machine tools; metal-forming machines of various types; critical mechanical elements; machine tool electronics and other sub-systems; as well as software for design / analysis / simulation, machining and manufacture. These are technologies where the industry considerably lags at present.

The other key stress will be on skill development and workforce enhancement. The Indian machine tool industry currently has a direct employment of 30,000, which is estimated to double by 2016-2017, he added.

Thanking all the members for their contribution in compilation of the approach paper titled "Report on the Sub Group on Machine Tools," Mr. Rao highlighted that the Planning Commission and DHI has constituted a Sub-Group on Machine Tools and had involved the Association in collating a forward-looking approach for the industry. The Sub Group comprised not just the machine tool industry but also other stake-holders – primarily the main customer segments such as the auto and auto component industry, Defence, Railways, BHEL, DRDO as well as the academia. He added that the Working Group on "Capital Goods and Engineering Sector" has accepted almost all suggestions made by the "Sub Group on Machine Tools".





Acceptance of these and other suggestions for the Indian capital goods industry will go a long way in further enhancing its competitiveness. But, more important than that, it would also give a fillip to the manufacturing sector towards realising the vision crafted by the Planning Commission.

He exhorted Indian machine tool manufacturers to lay greater emphasis on expanding capacities; focusing on innovation, design and new product development; working towards bridging technology gaps; taking measures towards skill enhancement and workforce development.

Mr. Rao announced a partnership between IMTMA and the National Skills Development Corporation to form a "Sector Skills Council for Machine Tool Industry". The Councils' primary function is to project sector specific skill shortage and address other key issues affecting manpower requirements.

Focusing on the other key initiatives of the Association in the next five years, he said there would be a strong emphasis on training programmes – for both manufacturers and users of machine tools. The immediate aim is to organise 150 training programmes annually on a wide range of topics relating to the machine tool industry.

The second focus area will be the traditional Association activities, which include policy interface in a major way as also statistical data compilation and analysis. The third point of focus will be

on the trade fairs – IMTMA's trademark events of IMTEX, IMTEX FORMING, Tooltech and MODERN MACHINE SHOP. The Association has initiated steps to enhance the facilities and capacity of BIEC with the support of Government of Karnataka.

Concluding his last address as President of IMTMA, Mr. M. Lokeshwara Rao congratulated the newly-elected Executive Committee of the Association. As part of the business session, the President informed members about certain changes in the Articles of Association as necessitated by the changing industry scenario in terms of category of membership, product classification, etc. The proposed changes will enable the Association to work more efficiently in the new environment.

The Annual session was followed by a meeting of the newly-elected members of the IMTMA Executive Committee. The members unanimously elected Mr. Vikram Sirur, Executive Chairman, Miven Machine Tools Limited, Hubli as President and Mr. L. Krishnan, Managing Director, TaeguTec India Private Limited as Vice President of IMTMA for the year 2011 - 2012.





CALENDAR OF EVENTS

2011

JULY

- Finishing School in Production Engineering in **Bangalore** from **04 to 29**.
- Training programme on Heat Treatment Process in Metal Working in **New Delhi** on **08**.
- Seminar on Inspection and Testing of CNC Metal Cutting Machine Tools in **Pune** on **12**.
- Seminar on Right Selection of Linear Motion Guideways, Ball Screws and Servo Drives for Industrial Machinery in **Pune** on **13**.
- Training programme on technical system and management requirements of ISO/IEC 17025: 2005 for Mechanical Testing and Calibration Laboratories in **Bangalore** from **14 to 16**.
- Seminar on Manufacturing Excellence through TQM approach in **Bangalore** on **15 and 16**.
- Training programme on Reducing Cycle Time and Machining Cost on CNC Machining Centres in **Gurgaon** on **15 and 16**.
- Seminar on Latest Trends in Gear Manufacturing in **Bangalore** on **19**.
- Training programme on Reducing Cycle Time and Machining Cost on CNC Turning Centres in **Pune** on **19 and 20**.
- Seminar on Die and Mould Manufacturing in **Chennai** on **22 and 23**.
- Programme on Business Opportunities in Indian Railways in **New Delhi** on **29**.
- Training programme on Part Programming for CNC Machines in **Gurgaon** on **29 and 30**.
- Workshop on Surface Finish and its Measurement in **Pune** on **10**.
- Seminar on Die & Mould Manufacturing in **Gurgaon** on **11 and 12**.
- Workshop on Evaluation of Uncertainty in Dimensional Measurements in **Pune** on **12 and 13**.
- Seminar on Latest Trends in Gear Manufacturing in **Gurgaon** on **18**.
- Seminar on Right Selection of Linear Motion Guideways, Ball Screws and Servo-drives for Industrial Machinery in **Bangalore** on **19**.
- Seminar on Right Selection of Linear Motion Guideways, Ball Screws and Servo-drives for Industrial Machinery in **Bangalore** on **20**.
- Workshop on Machine Tool Testing and Calibration of CNC Machines in **Gurgaon** on **19 and 20**.
- Workshop on Design of Workholding and Fixturing in **Pune** on **23 and 24**.
- Training Programme on Geometric Dimensioning and Tolerancing in Design through Manufacturing in **Bangalore** from **24 to 26**.
- Seminar on Heat treatment Process in Metal Working in **Bangalore** on **25 and 26**.
- Training programme on Spindle Design for Metal Cutting and Industrial Machinery in **Pune** on **26**.
- **Interactive meeting and plant visit by IMTMA Regional Council (North) members to JCB India Limited in Faridabad on 26.**
- Training Programme on Spindle Maintenance for Metal Cutting & Industrial Machinery in **Pune** on **27**.

AUGUST

- Seminar on Selection of Tooling for Machining Aerospace Materials in **Bangalore** on **04 and 05**.
- Training programme on New Product Development on CNC Turning Centres in **Gurgaon** on **26 and 27**.

CALENDAR OF EVENTS



SEPTEMBER

- Finishing School in Production Engineering in **Bangalore** from **05 Sept to 01 October**.
- **65th Annual Session of IMTMA at Bangalore on 08.**
- **Workshop and Interactive Session on 'Theory of Constraints' at Bangalore on 08.**
- Seminar on Getting the best out of Co ordinate Measuring Machines (CMMs) in **New Delhi** on **09 and 10**.
- Seminar on Design of Workholding and Fixturing in **Bangalore** on **12 and 13**.
- IMTMA-UNIDO Technology Missions to Germany coinciding with EMO 2011 exhibition at Hannover, 14-24 September 2011 and 20-30 September 2011.
- Seminar on Inspection and Testing of CNC Metal Cutting Machine Tools in **Bangalore** on **14**.
- Workshop on Form and Positional Errors and their Measurement in **Bangalore** on **16**.
- Seminar on Effective Maintenance of CNC Grinding Machines for Productivity Improvement in **Bangalore** on **19 and 20**.
- Seminar on Heat Treatment Process in Metal Working in **Pune** on **20**.
- Seminar on Design of Hydraulics, Pneumatics, Coolants and Lubrication Systems in **Pune** on **21**.
- Workshop on TPM Featured Machine Tools for Higher Productivity in **Gurgaon** on **24**.
- Seminar on Latest Trends in Gear Manufacturing in **Pune** on **26 and 27**.

OCTOBER

- **Regional Productivity Summit in Chennai on 10.**
- Training programme on Geometric Dimensioning and Tolerancing in Design through Manufacturing in **Gurgaon** on **12 and 13**.

- **Regional Productivity Summit in Pune on 15.**

- Training programme on Geometric Dimensioning and Tolerancing [GD&T] in Design through Manufacturing in **Bangalore** from **17 to 19**.
- Seminar on Design of Workholding and Fixturing in **Gurgaon** on **18 and 19**.
- Seminar on Design of Hydraulics, Pneumatics, Coolant and Lubrication System in **Bangalore** on **20**.
- **Regional Productivity Summit in New Delhi on 21.**
- Training programme on Spindle Maintenance for Metal Cutting and Industrial Machinery in **Bangalore** on **21 and 22**.

NOVEMBER

- Training Programme on Geometric Dimensioning and Tolerancing (GD & T) in Design through Manufacturing (Inhouse programme at Meritor CVS in **Bangalore** from **02 to 04**.)
- Workshop on Idle Time Reduction in metal cutting through quick changeover techniques in **Gurgaon** on **03**.
- Workshop on Process Capability - The Quality route to Sustained Growth in Manufacturing in **Gurgaon** on **04**.
- Finishing School in Production Engineering in **Bangalore** from **07 Nov to 03 December**.
- Workshop on Measurement Systems Analysis in **Pune** on **08 and 09**.
- Training Programme on Geometric Dimensioning and Tolerancing (GD & T) in Design through Manufacturing (Inhouse programme at Mapal India in **Bangalore** from **10 to 12**.)
- Workshop on Process Capability - The Quality route to Sustained Growth in Manufacturing in **Bangalore** on **15 and 16**.
- Seminar on Concepts of Green machining practices in **Bangalore** on **18**.



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- ➔ Seminar on Manufacturing Excellence through TQM approach in **Gurgaon** on **18 and 19**.
- ➔ Seminar on Idle time reduction in metal cutting through quick changeover techniques in **Pune** on **19**.
- ➔ Training programme on Reducing Cycle Time and Machining Cost on CNC Turning Centres in **Bangalore** on **22 and 23**.
- ➔ Seminar on Lean Six Sigma: a Techno-Managerial Business Model in **Bangalore** on **23**.
- ➔ Seminar on Welding Technology in Auto Industry in **Pune** on **23**.
- ➔ Training programme on Spindle Maintenance for Metal Cutting and Industrial Machinery in **Gurgaon** on **24 and 25**.
- ➔ Training programme on Advanced Programming for CNC turning Centres in **Gurgaon** on **25 and 26**.
- ➔ Seminar on Design of Hydraulics, Pneumatics, Coolant and Lubrication System organised in **Gurgaon** on **26**.
- ➔ Training programme on Practical Solutions for Designing Complex Plastic Injection Moulds in **Pune** on **29 and 30**.
- ➔ Training Programme on Spindle Maintenance for Metal Cutting & Industrial Machinery in **Pune** on **12 and 13**.
- ➔ Training Programme on Implementing Manufacturing ERP - Digital Factory in **Bangalore** on **15 and 16**.
- ➔ Seminar on Idle time reduction in metal cutting through quick changeover techniques in **Pune** on **16**.
- ➔ Seminar on Design of Workholding and Fixturing in **Bangalore** on **16 and 17**.
- ➔ Workshops on Effective Maintenance of CNC Machines for Productivity Improvement in **Bangalore** from **19 to 21**.
- ➔ **Interactive meeting between the Machine Tool Manufacturers (MTMs) and Suppliers of Telescopic Covers at Bangalore on 20.**
- ➔ Training Programme on Right Selection and Application of Tooling for CNC Machining Centres in **Gurgaon** on **20 and 21**.
- ➔ Workshop on Process Capability - The Quality route to Sustained Growth in Manufacturing in **Pune** on **20 and 21**.
- ➔ Seminar on Effective Utilization of CNC Grinding Machine for Productivity Improvement in **Gurgaon** on **22**.
- ➔ Seminar on Newer manufacturing strategies using Multi tasking and 5 axis CNC machines in **Bangalore** on **22 and 23**.
- ➔ Workshop on Effective Maintenance of Grinding Machines for 'Zero Breakdown' in **Gurgaon** on **23**.
- ➔ Training Programme on Geometric Dimensioning and Tolerancing in Design through Manufacturing (an Inhouse programme at Mercedes Benz in **Bangalore** from **26 to 28**.)

DECEMBER

- ➔ **Interactive meeting and plant visit by IMTMA Regional Council (North) members to Hero Cycles Limited in Ludhiana on 09.**
- ➔ Training programme on Geometric Dimensioning and Tolerancing in Design through Manufacturing in Pune on 09 and 10.
- ➔ **5th 'IMTMA – Siemens Productivity Championship Awards' and National Productivity Summit in Bangalore on 12 and 13.**

2012

JANUARY

- ➔ Seminar on Design of Workholding & Fixturing in **Bangalore** on **09 and 10**.
- ➔ Training programme on Geometric Dimensioning and Tolerancing in Design through Manufacturing in **Pune** on **10 and 11**.
- ➔ Seminar on Heat Treatment Process in Metalworking in **New Delhi** on **12 and 13**.
- ➔ Seminar on Cost Effective Automation for metalworking in **Pune** on **13**.
- ➔ Training programme on New Product Development on CNC Machining Centres in **Pune** on **17 and 18**.
- ➔ **International Seminar on Forming Technologies in Bangalore on 18.**
- ➔ **IMTEX FORMING 2012 – International Forming Technology exhibition and 14th Tooltech 2012 – International exhibition of Dies & Moulds, Forming tools, Machine Accessories, Metrology & CAD/CAM at BIEC, Bangalore from 19 to 24.**
- ➔ **Interactive session between IMTMA members and visit of CELIMO delegates in Bangalore on 20.**
- ➔ Workshop on Failure Mode & Effects Analysis' (FMEA) in **Bangalore** on **23 and 24**.
- ➔ **Interactive meeting and plant visit by IMTMA Regional Council (South) members to Rittal India Ltd in Dodaballapur on 25.**
- ➔ Workshop on Calibration of Dimensional Measuring Equipment & Evaluation of Uncertainty in Measurements in **New Delhi** on **24 and 25**.
- ➔ Training Programme on Right Selection & Application of Tooling for CNC Machining Centers in **Bangalore** on **30 and 31**.
- ➔ Seminar on Die & Mould Manufacturing in **Pune** on **30 and 31**.

FEBRUARY

- ➔ Finishing School in Production engineering in **Bangalore** from **06 Feb to 03 March**.
- ➔ Training Programme on Design of Workholding & Fixturing in **Gurgaon** on **02 and 03**.
- ➔ Workshop on Failure Mode & Effects Analysis (FMEA) in **Gurgaon** on **09 and 10**.
- ➔ Workshop on Surface Finish & its Measurement in **Bangalore** on **10**.
- ➔ Interactive Meet with HR Professionals in **Nashik** on **14**.
- ➔ **Seminar on Idle Time Reduction in Metal Cutting through Quick Changeover Techniques in Nashik on 15.**
- ➔ Training programme on Practical Solutions for Designing Complex Plastic Injection Moulds in **Bangalore** on **16 and 17**.
- ➔ **Brainstorming Session of IMTMA Export Development Group in Bangalore on 21.**
- ➔ Seminar on Getting the best out of Co-ordinate Measuring Machines (CMMs) in **Bangalore** on **23 and 24**.
- ➔ Training programme on Reducing Cycle Time & Machining Cost on CNC Turning Centres in **Gurgaon** on **23 and 24**.
- ➔ Workshop on Process Capability - The Quality route to Sustained Growth in Manufacturing in **Jamshedpur** on **23 and 24**.
- ➔ Training programme on Right Selection & Application of Tooling for CNC Machining Centres in **Pune** on **24 and 25**.
- ➔ Seminar on Design of Workholding & Fixturing in **Pune** on **27 and 28**.

MARCH

- ➔ Training programme on Practical Solutions for Designing Complex Plastic Injection Moulds in **Gurgaon** on **02 and 03**.



CALENDAR OF EVENTS

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- ➔ Seminar on Cost Effective Automation for Metal Working in **Bangalore** on **05 and 06**.
- ➔ Workshop on Programming and Operation of CNC Machining Centres in **Bangalore** from **12 to 16**.
- ➔ Design Awareness Seminar supported by NID & Ministry of MSME in **Bangalore** on **13**.
- ➔ Workshop on Failure Mode & Effects Analysis (FMEA) in **Pune** on **13 and 14**.
- ➔ Seminar on Welding Technology in Auto Industry in **Gurgaon** on **15**.
- ➔ Seminar on Programmable Logic Controller (PLC) Technology in Industrial Automation in **Bangalore** on **16**.
- ➔ Seminar on Idle Time Reduction an (in-house programme at Maruti Suzuki in **Bangalore** on **16**.)
- ➔ Seminar on Design and Processing of Injection Moulded Components in **Pune** on **16**.
- ➔ Workshop on Design of Experiments (DoE) in **Bangalore** on **20 and 21**.
- ➔ Seminar on Value Engineering and Value Analysis in **Bangalore** on **12**.
- ➔ Seminar on Design and Processing of Injection Moulded Components in **Gurgaon** on **12**.
- ➔ Training programme on Reducing Cycle Time & Machining Cost on CNC Machining Centres in **Gurgaon** on **13 and 14**.
- ➔ **Interactive Meet with HR Professionals in Bangalore on 14.**
- ➔ **Technology Mission to Korea and SIMTOS 2012 at Seoul, Republic of Korea from 15 to 21.**
- ➔ **CEO's Delegation to Korea and Taiwan from 19 to 25.**
- ➔ Training Programme on New Product Development on CNC Turning Centres in **Pune** on **17 and 18**.
- ➔ Workshop on Acceptance and Testing of CNC Machines in **Gurgaon** on **18**.
- ➔ Seminar on applications of Lasers in metal working in **Pune** on **20**.

APRIL

- ➔ **MODERN MACHINE SHOP 2012 – International Exhibition of Manufacturing Technology & Production Equipment in Greater Noida from 05 to 08.**
- ➔ **Interactive Meeting between Machine Tool Manufacturers and Suppliers of Panel Air-conditioners in Bangalore on 10.**
- ➔ Training Programme on Geometric Dimensioning and Tolerancing in Design through Manufacturing in **Chennai** on **10 and 11**.
- ➔ Workshop on Form & Positional Errors and their Measurement in **Pune** on **10 and 11**.
- ➔ Workshop on Workholding and Fixturing Techniques for Productivity Improvement on CNC Machines in **Bangalore** on **11 and 12**.
- ➔ Workshop on Failure Mode and effects Analysis (FMEA) in **Bangalore** on **20 and 21**.
- ➔ Seminar on Hydroforming and its applications in **Pune** on **24**.
- ➔ Workshop on Calibration of CNC Machine Tools in **Bangalore** on **25**.
- ➔ Seminar on Die & Mould Manufacturing in **Coimbatore** on **26 and 27**.

MAY

- ➔ Workshop on Design of Experiments (DoE) in solving real life problems in **Gurgaon** on **04 and 05**.
- ➔ Finishing School in Production Engineering in **Bangalore** from **07 May to 02 June**.
- ➔ Seminar on Servo Technology for Industrial Motion Control in **Bangalore** on **11**.

CALENDAR OF EVENTS



- ➔ Seminar on Industrial Cleaning Processes for Machined Components in **Bangalore** on **15**.
- ➔ Seminar on Value Engineering and Value Analysis in **Gurgaon** on **15**.
- ➔ **4th Machine Tool Industry Summit in Lavasa from 17 to 20.**
- ➔ Workshop on The system Approach to precision manufacturing - Grinding Processes in **Bangalore** from **22 to 25**.
- ➔ Seminar on Right Selection of Linear Motion Guideways, Ball screws & Servo Drives for Industrial Machinery in **Pune** on **23**.

JUNE

- ➔ Training Programme on Geometric Dimensioning and Tolerancing (GD&T) in Design through manufacturing in **Gurgaon** on **5 and 6**.
- ➔ Workshop on Surface Finish and its Measurement in **Pune** on **11**.
- ➔ Workshop on Calibration on Dimensional Measuring Instruments and Evaluation of Uncertainty in **Pune** on **12 and 13**.

- ➔ **Interactive meeting and plant visit by IMTMA Regional Council (South) members to Bharat Fritz Werner in Bangalore on 15.**
- ➔ Seminar on How to improve the accuracy of machine tools in **Bangalore** on **15**.
- ➔ Workshop on Form & Positional errors and their measurement in **Bangalore** on **15 and 16**.
- ➔ Workshop on Programming and Operation of CNC Machining Centres in **Bangalore** from **18 to 22**.
- ➔ Training Programme on Reducing cycle time and machining cost on CNC Machining Centres in **Pune** on **19 and 20**.
- ➔ Seminar on Manufacturing Automation Using Robots in **Bangalore** on **26**.
- ➔ Workshop on Design of Experiments (DOE) in solving real life problems in **Pune** on **26 and 27**.
- ➔ Training Programme on Right selection and application of tooling for CNC machining centres in **Gurgaon** on **27 and 28**.



IMTEX FORMING 2012 and Tooltech 2012



IMTEX FORMING 2012 and the Tooltech exhibition was the destination for the latest Forming technology trends in metalworking industry.

Indicating a boom in the metal forming industry, IMTEX FORMING 2012 – International Forming Technology Exhibition and Tooltech 2012 – International Exhibition of Dies & Moulds, Forming Tools, Machine Accessories, Metrology and CAD/CAM, showcased the latest technology trends in metalworking industry from 19 to 24 January 2012. Organised by the Indian Machine Tool Manufacturers' Association, the exhibitions were held at the Bangalore International Exhibition Centre (BIEC) in Bangalore.

Spread across 30,000 sqm of gross area in the 5

large halls which consisted of 528 exhibitors, the exhibitions had a total of 24 countries participating. IMTEX FORMING and Tooltech exhibitions fuelled the growth of Machine Tool Industry and formed an optimistic ambience by showcasing the revolutionary advances in metal forming industry and revealing the capability of the forming industry.

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 exhibitions appealed a global image with 260 foreign companies taking part, matching the number of Indian participation which comprised





of 268 Indian companies. Major highlight of the exhibition included innovative displays from the Small Scale Industries.

The exhibitions had a splendid inaugural ceremony with Dr. K Kasturirangan, Member of Planning Commission - Government of India; Mr. Jamshyd N. Godrej, Chairman Exhibitions and Mr. Vikram Sirur, President – IMTMA inaugurating the exhibitions. Addressing the inaugural ceremony, Chief Guest Dr. K. Kasturirangan, said, "One of the most important strategies of Government of India is to support in bringing more and more innovations to the various processes, manufacturing and operations in various segments of National endeavor. As declared by the government earlier, this entire decade would focus on innovation." He



also shed some light on the 12th Five year plan and revealed the entire basket of opportunities available for the industry to vouch on.

IMTEX FORMING 2012 and Tooltech 2012 recorded business orders worth Rs. 3,900 million transacted across the stands, while generating potential business enquiries to the tune of Rs. 27,460 million. The six day exhibition recorded a huge turnout of about 40,000 business visitors.

IMTEX FORMING 2012 and Tooltech 2012 in true terms crafted a virtual world of FORMING technology with the exhibition propelling a growth of 40 % compared to its previous edition and set an optimistic theme for the future of Metal Forming industry.





ACTIVITIES DURING 2011 - 2012

MAJOR EVENTS

Regional Productivity Summits

Moving ahead of time and thinking beyond just kaizens, the three Regional Productivity Summits organized by the Association in true terms showcased, out of the box solutions in improving productivity. The best ideas and innovations in the industry competed in three regions held at Chennai on 10 October, 2011, in Pune on 15 October 2011 and in New Delhi on 21 October 2011.



24 teams, shortlisted from about 300 abstracts submitted from across the manufacturing industry truly justified their existence with powerful live case study presentations. The presentations aimed at



converting ideas into benefits and profits. With innovations developed without major investments, the novelty was overcoming the productivity challenges and going beyond it.

National Productivity Summit 2011 and 5th IMTMA – Siemens Productivity Championship Awards'

National Productivity Summit 2011 was organized at BIEC on 12 and 13 December 2011 and was rightly a platform for 'sharing' and 'learning' the best productivity practices in metalworking manufacturing industry. The two day summit witnessed active participation by about 300 Industry professionals.

ACTIVITIES DURING 2011 - 2012



The Summit reached a new high when Mr Peter Walsh, Founder President, Lean Enterprise, Australia addressed the inaugural session on Leader's Roles in Sustaining and Expanding Lean Transformations.



The highlight of the summit was the 'IMTMA-Siemens Productivity Championship Awards 2011' which rewarded each presentation based on their own merits. The Summit was a fine blend of keynote presentations by the "Industry leaders" and case study presentations by the "budding talents" of the industry.





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International Seminar on Forming Technologies

Innovations, technology trends and everything related to the field of Forming technology was the main focus of deliberations at the International Seminar on Forming Technology (ISFT) organised by the Association in conjunction with IMTEX FORMING 2012 in Bangalore on 18 January 2012.

The rapid growth of the Forming industry in India and globally was reflected in the overwhelming response of over 400 delegates actively participating in the event. The seminar was put on a high note with the inaugural keynote address by Dr. Andreas Sterzing, Fraunhofer IWU, Chemnitz, Germany. His session on the global advances in forming technology concentrated on the strategic approaches to meet the future challenges.



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Stressing on the need for building a brand by focusing on quality, sustainability and environmental care, Glenville Da Silva, Vice President – Business Development, Volvo Construction Equipment made his inaugural address. The technology which will shape the future of the Forming industry was intensely discussed at the seminar under the broad subjects: Metal Forming, Emerging Trends and Forging and Forming.



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 etc.

MODERN MACHINE SHOP 2012

Taking a revolutionary step this year, Modern Machine Shop (MMS) 2012 was scheduled in a location close to the customer base in the Northern region which generates about 40% of the total machine tool demand in the country. This unique B2B exhibition of Manufacturing Technology and Production Equipment was organised in, Greater Noida from 05 – 08 April 2012. MMS focused on a wide range of machine tool manufacturers, right from setting up shop floor machines, material handling and storage systems, design software, cleaning equipment, safety, hand tools etc.





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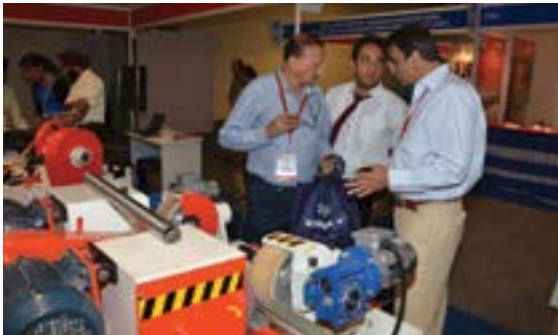


Spread across 5,000 sqm of the exhibition area, MMS 2012 witnessed participation from 100 companies with 41 being SMEs from 6 countries. MMS 2012 hosted a exhibitor group from United Nations Industrial Development Organization (UNIDO - ICAMT) which comprised of 30 SMEs who sought an opportunity to showcase their technology upgradation at the exhibition.

The exhibition registered a footfall of over 3,000 visitors and recorded confirmed business generation of Rs 64 million and business enquiries to the tune of Rs 1937 million. MMS 2012 showcased today's rapidly changing productivity, quality and flexibility requirements in manufacturing.



ACTIVITIES DURING 2011 - 2012



4th Machine Tool Industry Summit

The Indian machine tool fraternity gathered in large numbers at Lavasa, the new hill city near Pune, from 17 to 20 May 2012, to discuss the changing business scenario of the machine tool industry. With 325 delegates representing about 100 companies, the 4th Machine Tool Industry Summit revolved around the broad theme of "THINK BIG".



Inspiring inaugural and keynote addresses by Mr. Pradeep Bhargava and Mr. Manish Gupta respectively, set the tone for the Summit by leading the delegates on the lines of turning dreams into reality.



The following two days were woven in a tapestry of panel discussions, experience sharing and thought provoking presentations from well known industry experts who propelled each individual to 'Think Big'. Machine tool companies, with significant work to their credit shared their experiences through case study presentations which dwelt upon core areas such as Globalisation, Supply Chain, Branding and Marketing, Innovation, Cost Management etc.

The sessions played a key role in introspecting upon these areas and bringing to the forefront how we could better manage our companies to be globally competitive.



ACTIVITIES DURING 2011 - 2012



TRAINING PROGRAMMES

Finishing School in Production Engineering

04 to 29 July 2011 : Bangalore
05 September to 01 October 2011 : Bangalore
07 November to 03 December 2011 : Bangalore
06 February to 03 March 2012 : Bangalore
07 May to 02 June 2012 : Bangalore



Aimed at enhancing the skills of fresh graduate engineers and making them industry employable, five batches of 'Finishing School in Production Engineering' were held at IMTMA Technology Centre from 04 to 29 July 2011; 05 September to 01 October 2011; 07 November to 03 December 2011; 06 February to 03 March 2012



and 07 May to 02 June 2012. The programme focused on all the practical aspects of modern machining - from reading an engineering drawing through measurements and quality control. The programme also covered soft skills, making the students equipped with the industry knowledge.

Heat Treatment Process in Metal Working

08 July 2011 : New Delhi
25 and 26 August 2011 : Bangalore
20 September 2011 : Pune
12 and 13 January 2012 : New Delhi



The process of heat treatment has a major bearing on the quality of the end product and finds a wide application in many industries. In order to address the importance of various heat treatment operations and their relative advantages, four seminars on 'Heat Treatment Process in Metal Working' were organized. Two programmes were scheduled in New Delhi on 08 July 2011 and on 12 and 13 January 2012. One programme each were scheduled in Bangalore on 25 and 26 August 2011 and in Pune on 20 September 2011.

Inspection and Testing of CNC Metal Cutting Machine Tools

12 July 2011 : Pune
14 September 2011 : Bangalore



Machine tool performance is determined essentially by the dynamic and static accuracy of machine movement. With the idea of training CNC Machine Tool users of the Manufacturing Industry, two seminars on "Inspection and Testing of CNC Metal Cutting Machine Tools" were held in Pune on 12 July 2011 and in Bangalore on 14 September 2011.

Right Selection of Linear Motion Guideways, Ball Screws and Servo Drives for Industrial Machinery

13 July 2011 : Pune
19 August 2011 : Bangalore
20 August 2011 : Bangalore
23 May 2012 : Pune



Motion elements such as Linear Motion Guideways, Ball Screws and Servo drivers in true terms give motion for Industrial Machinery. As per the plant requirements, a number of parameters

are checked before selecting a new component. Guiding the companies on smart investment and right usage, four seminars on 'Right Selection of Linear motion Guideways, ball screws and Servo drives for Industrial Machinery' were organized in Pune on 13 July 2011, in BIEC on two consecutive days on 19 August 2011 and 20 August 2011 and in Pune on 23 May 2012.

Technical system and management requirements of ISO/IEC 17025: 2005 for Mechanical Testing and Calibration Laboratories

14 to 16 July 2011 : Bangalore



Although the revised version of ISO/IEC 17025 standard was released in 2005, its understanding by the Mechanical Testing and Calibration laboratories has remained minimal by most of the mechanical testing and calibration laboratories. Providing an understanding of the standard, a training programme on 'Technical system and Management requirements of ISO/IEC 17025:2005 for Mechanical Testing and Calibration Laboratories' was organized in Bangalore from 14 to 16 July 2011.

Manufacturing Excellence through TQM approach

15 and 16 July 2011: Bangalore
18 and 19 November 2011 : Gurgaon

As a machine needs constant servicing for better performance, every company requires the right approach to Total Quality Management to constantly improve the quality at each level. Keeping



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this in view, two seminars on 'Manufacturing Excellence through TQM approach' were held on 15 and 16 July 2011 at Bangalore and on 18 and 19 November 2011 in Gurgaon.

Reducing Cycle Time and Machining Cost on CNC Machining Centres

15 and 16 July 2011: Gurgaon
19 and 20 June 2012 : Pune



Reduction in cycle time and machining cost plays an important role in enhancing productivity, especially in large volume production. Keeping this in view, two training programmes on 'Reducing Cycle Time & Machining Cost on CNC Machining Centres' were held in Gurgaon on 15 and 16 July 2011 and in Pune on 19 and 20 June 2012.

Latest Trends in Gear Manufacturing

19 July 2011 : Bangalore
18 August 2011 : Gurgaon
26 and 27 September 2011 : Pune

There has been a phenomenal improvement in the type of gears manufactured, and from the traditional gears made through conventional methods of casting and forging to plastic gears that are made with light but durable materials, gears have come a long way. They find application in an array of industrialized products today and keeping this in view, three seminars on 'Latest Trends in Gear Manufacturing' were organized in Bangalore on 19 July 2011; in Gurgaon on 18 August 2011 and in Pune on 26 and 27 September 2011.

Reducing Cycle Time and Machining Cost on CNC Turning Centres

19 and 20 July 2011 : Pune
22 and 23 November : Bangalore
23 and 24 February 2012 : Gurgaon
13 and 14 April 2012 : Gurgaon



Machine utilization has a major impact in reducing the manufacturing cost of components. In order to closely understand the working of CNC Turning Centres, four training programmes on 'Reducing Cycle Time & Machining Cost on CNC Turning Centres' were conducted. The programmes were scheduled in Pune on 19 and 20 July 2011; in Bangalore on 22 and 23 November and twice in Gurgaon on 23 and 24 February 2012 and on 13 and 14 April 2012.

Die and Mould Manufacturing

22 and 23 July 2011 : Chennai
11 and 12 August 2011 : Gurgaon
30 and 31 January 2012 : Pune
26 and 27 April 2012 : Coimbatore



In Die and Mould (D&M) manufacturing industry, getting the moulds right at the first attempt is a boon. Shedding light on those challenges, four



seminars on 'Die and Mould Manufacturing' were organized. The programmes were scheduled in Chennai on 22 and 23 July 2011; in Gurgaon on 11 and 12 August 2011; in Pune on 30 and 31 January 2012 and in Coimbatore on 26 and 27 April 2012.

Programme on Business Opportunities in Indian Railways

29 July 2011 : New Delhi

Machine tool industry is brimming with opportunities and Indian Railways is one of the key customer segments of metal working machine tools and manufacturing solutions. There has been a growing demand from almost all manufacturing units of Indian Railways. Observing this growing trend, a seminar on 'Opportunities in Rail Coach Factory Rae Bareilly – A pioneer Project of Indian Railways' was held on 29 July 2011 in New Delhi.

Part Programming for CNC Machines

29 and 30 July 2011 : Gurgaon

With rapid changes in high-precision manufacturing process, there is a need to continuously update the knowledge and skills of the man-behind-the-machine so as to precisely use them for maximum benefit. Keeping this in view, a training programme on 'Part programming for CNC Machines' was organized on 29 and 30 July 2011 in Gurgaon.

Selection of Tooling for Machining Aerospace Materials

04 and 05 August 2011 : Bangalore



Machining of aerospace components is quite challenging, due to the involvement of advanced materials like high performance metal alloys and composites. Keeping this in view, a seminar on 'Selection of Tooling for Machining Aerospace Materials' was organized at Bangalore on 04 and 05 August 2011.

Surface Finish and its Measurement

10 August 2011 : Pune

11 June 2012 : Pune

10 February 2012 : Bangalore



Most of the industrial products and components, extensively depend upon the surface finish. However, there is a bewildering variety of techniques for measuring the surface finish. Shedding light on the importance of measuring surface finish, three workshops on 'Surface Finish and its Measurement' were organized. The programmes were scheduled in Pune on 10 August 2011 and 11 June 2012 and in Bangalore on 10 February 2012.



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Evaluation of Uncertainty in Dimensional Measurements

12 and 13 August 2011 : Pune



Every measurement is subject to some uncertainty and the measurement result is complete only if it is accompanied by a statement of the uncertainty. In order to understand the established rules for calculating an overall estimate of uncertainty from individual pieces of measurement, a workshop on 'Evaluation of Uncertainty in Measurements' was organized in Pune on 12 and 13 August 2011.

Machine Tool Testing and Calibration of CNC Machines

19 and 20 August 2011 : Gurgaon



Periodic Testing and Calibration of machine tools becomes an essential part of predictive maintenance programme. Addressing this issue, a workshop on 'Machine Tool Testing and Calibration of CNC Machines' was held in Gurgaon on 19 and 20 August 2011.

Design of Workholding and Fixturing

23 and 24 August 2011 : Pune
12 and 13 September 2011 : Bangalore
18 and 19 October 2011 : Gurgaon
16 and 17 December 2011 : Bangalore
09 and 10 January 2012 : Bangalore
02 and 03 February 2012 : Gurgaon
27 and 28 February 2012 : Pune
11 and 12 April 2012 : Bangalore



Workholding devices and Fixtures are used on machines to control cost and reduce time. Hence, using the right device not only improves productivity but also eliminates the quality defects. Providing a feel of designing the right Workholding and Fixturing devices, a workshop on 'Design of Workholding and Fixturing' was repeated eight times. The workshops were held in Pune on 23 and 24 August 2011 and 27 and 28 February 2012; in Bangalore on 12 and 13 September 2011; 16 and 17 December 2011; 09 and 10 January 2012; 11 and 12 April 2012; and in Gurgaon on 18 and 19 October 2011 and on 02 and 03 February 2012.

Geometric Dimensioning and Tolerancing in Design through Manufacturing

24 to 26 August 2011 : Bangalore
12 and 13 October 2011 : Gurgaon
17 to 19 October 2011 : Bangalore
09 and 10 December 2011 : Pune
10 and 11 January 2012 : Pune
10 and 11 April 2012 : Chennai
05 and 06 June 2012 : Gurgaon



Geometric Dimensioning and Tolerancing (GD&T) ensures to define the allowable variation in form and possibly size of individual features, and to define the allowable variation between features. Considering this, seven training programmes on 'Geometric Dimensioning and Tolerancing (GD&T) in design through manufacturing' were organized. The programmes were scheduled at Bangalore from 24 to 26 August 2011; 17 to 19 October 2011; in Gurgaon on 12 and 13 October 2011; 05 and 06 June 2012; in Pune on 09 and 10 December 2011; 10 and 11 January 2012 and in Chennai on 05 and 06 June 2012.

Spindle Design for Metal Cutting and Industrial Machinery

26 August 2011 : Pune



The fineness of an end product directly depends upon the precision of the spindle. Understanding the importance of spindle design which is the first step in maintenance of spindles, a training programme on 'Spindle Design for Metal cutting and Industrial Machinery' was organized in Pune on 26 August 2011.

Spindle Maintenance for Metal Cutting and Industrial Machinery

27 August 2011 : Pune
12 and 13 December 2011 : Pune
21 and 22 October 2011 : Bangalore
24 and 25 November 2011 : Gurgaon



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. Keeping this in view, four training programmes on 'Spindle Maintenance for Metal Cutting and Industrial Machinery' were organized. The programmes were scheduled on Pune on 27 August 2011 and 12 and 13 December 2011. At Bangalore on 21 and 22 October 2011 and in Gurgaon on 24 and 25 November 2011.

New Product Development on CNC Turning Centres

26 and 27 August 2011 : Gurgaon
17 and 18 April 2012 : Pune
17 and 18 January 2012 : Pune

New product development (NPD) describes the process of developing a new product from



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a completely new idea. NPD on CNC Turning Centres provides an opportunity to create competitive distinction, explore new markets and multiply revenues. Encouraging the process of developing new ideas and products, three training programmes on 'New Product Development on CNC Turning Centres' were organized. The programmes were held in Gurgaon on 26 and 27 August 2011 and in Pune on 17 and 18 April 2012 and on 17 and 18 January 2012.

Getting the best out of Co-ordinate Measuring Machines (CMMs)

09 and 10 September 2011 : New Delhi
23 and 24 February 2012 : Bangalore



Keeping pace with the ever increasing demand for precision engineered machined parts, the traditional methods of inspection with gauges and fixtures have been replaced by the Co-ordinate Measuring Machines (CMM) today. To ensure that the user gets the maximum out of CMMs, two seminars on the topic 'Getting the best out of Co-ordinate Measuring Machines (CMMs)' was organized in New Delhi on 9 and 10 September 2011 and at BIEC on 23 and 24 February 2012.

Form and Positional Errors and their Measurement

16 September 2011 : Bangalore
10 and 11 April 2012 : Pune
15 and 16 June 2012 : Bangalore



Understanding the importance of identifying the errors originating from the natural wear and tear, crashes and failing moving parts, three workshops on 'Form and Positional Errors and their Measurement' were organized. The workshops were held at Bangalore on 16 September 2011 and on 15 and 16 June 2012; in Pune on 10 and 11 April 2012.

Effective Utilization of CNC Grinding Machine for Productivity Improvement

19 and 20 September 2011 : BIEC
22 December 2011 : Gurgaon

CNC Grinding machines are extremely versatile in its application and are used to perform a variety of grinding operations like surface, cylindrical and complex shapes. As it is often the last process in any component machining, its optimization and



effective utilization is of utmost importance in giving the final touch. Keeping this in view, two seminars on 'Effective Utilization of CNC Grinding Machine for productivity Improvement' were held at Bangalore on 19 and 20 September 2011 and in Gurgaon on 22 December 2011.

Design of Hydraulics, Pneumatics, Coolants and Lubrication Systems

21 September 2011 : Pune
20 October 2011 : Bangalore
26 November 2011 : Gurgaon



The demand for faster production, better quality at lower cost, reduced waste with energy efficient devices has today necessitated the need for right selection of Hydraulic and Pneumatic elements coupled with effective coolant and lubrication system. Keeping all the elements aligned together, three seminars on 'Design of Hydraulic, Pneumatic, Coolant and Lubrication Systems' were organized. The programmes were scheduled in Pune on 21 September 2011; at Bangalore on 20 October 2011 and in Gurgaon on 26 November 2011.

TPM Featured Machine Tools for Higher Productivity

24 September 2011 : Gurgaon



Recognising the need for a systematic approach towards achieving the desired results, IMTMA took the initiative to study the design modifications required on Machine tools and thus prepared a 'Guideline on TPM featured machines' and shared the information on TPM featured machine tools. The workshop on 'TPM Featured Machine Tools for Higher Productivity' was held in Gurgaon on 24 September 2011.

Idle Time Reduction in metal cutting through quick changeover techniques

03 November 2011 : Gurgaon
19 November 2011 : Pune
16 December 2011 : Pune
15 February 2012 : Nashik



Increased demand for product variability, reduced product life cycles and the need to reduce inventories in metal working has made way for idle time reduction through quick changeover / set-up time reduction. Recognising this ever increasing



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demand, four seminars on 'Idle Time Reduction in metal cutting through quick changeover techniques' were organized. The programmes were scheduled at Gurgaon on 03 November 2011; in Pune on 19 November 2011 and 16 December 2011 and at Nashik on 15 February 2012.

Process Capability - The Quality route to Sustained Growth in Manufacturing in

04 November 2011 : Gurgaon
15 and 16 November 2011 : Bangalore
20 and 21 December 2011 : Pune
23 and 24 February 2012 : Jamshedpur



Users of machine tools ensure that machines are not only reliable and productive but also expect them to achieve a high degree of Process Capability with consistent precision and accuracy. This challenge is common and is faced by Production Engineers, Tool suppliers, Machine Tool builders & Maintenance Engineers who should address jointly. Understanding the importance of the subject, four workshops on 'Process Capability - The Quality route to Sustained Growth in Manufacturing' was organized. The programmes were scheduled in Gurgaon on 04 November 2011; at Bangalore on 15 and 16 November 2011; in Pune on 20 and 21 December 2011 and in Jamshedpur on 23 and 24 February 2012.

Measurement Systems Analysis

08 and 09 November 2011 : Pune

Measurement Systems Analysis evaluates the test method, measuring instruments, and the entire process of obtaining measurements to ensure



the integrity of data used for analysis and to understand the implications of measurement error for decisions made about a product or process. Keeping this in view, a Workshop on 'Measurement Systems Analysis' was held in Pune on 08 and 09 November 2011.

Concepts of Green machining practices

18 November 2011 : Bangalore



The concept of Green Manufacturing aims at design and implementation of processes that will eliminate waste and reduce environmental impacts at work practices and plant operations. Keeping this in view and focusing on efficient operation, a seminar on Concepts of Green machining practices was held at BIEC on 18 November 2011.

Lean Six Sigma: a Techno-Managerial Business Model

23 November 2011 : Bangalore

Today 'Six Sigma' coupled with 'Lean' is the most embraced 'Management System -Business model' across Industrial segments. Realising the need to

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provide exposure on Lean Six Sigma as an Overall Management System, a seminar on 'Lean Six Sigma: A Techno-Managerial Business Model' was held at BIEC on 23 November 2011.

Welding Technology in Auto Industry

23 November 2011 : Pune

15 March 2012 : Gurgaon



Welding engineers face several challenges in developing better welding techniques and procedures applicable to the traditional and novel materials, either by developing new equipment or modifying the present machines. Keeping this in view, IMTMA with support from Don Bosco Maritime Academy organized a seminar on 'Welding Technology in Automobile Industry' in Pune on 23 November 2011.

Advanced Programming for CNC turning Centres

25 and 26 November 2011 : Gurgaon

Enhanced knowledge on CNC programming and its control features are very critical to control the



cost per component. CNC Turning Centres today form the core of manufacturing operations – right from producing small auto parts to mission critical aero space components. Keeping this in view, a programme on 'Advanced Programming for CNC turning Centres' was held at Gurgaon on 25 and 26 November 2011.

Practical Solutions for Designing Complex Plastic Injection Moulds

29 and 30 November 2011 : Pune

16 and 17 February 2012 : Bangalore

02 and 03 March 2012 : Gurgaon



Designers spend a lot of time on the shop floor to achieve delivery commitments and profitability. Understanding the importance of Tool design and designing it right at the first time itself, three training programmes on 'Practical Solutions for Designing Complex Plastic Injection Moulds' were organized. The programmes were scheduled at Pune on 29 and 30 November 2011; at Bangalore on 16 and 17 February 2012 and in Gurgaon on 02 and 03 March 2012.



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Implementing Manufacturing ERP - Digital Factory

15 and 16 December 2011 : Bangalore



In order to reach out to the industry on the advantages of Digital factory, IMTMA created a replica of Digital Factory engaged in batch production with all departmental functions digitally connected through ERP. Following this, a training programme on 'Implementing Manufacturing ERP - Digital Factory' was organized at Bangalore on 15 and 16 December 2011.

Effective Maintenance of CNC Machines for Productivity Improvement

19 to 21 December 2011 : Bangalore
23 December 2011 : Gurgaon



Effective usage of CNC machines is the key to achieve any desired output. Substantiating this theory was the National Survey on reliability of CNC machines conducted by IMTMA which highlighted the difficulties confronted by end users in controlling the downtime of CNC machines. Addressing this issue, two seminars on 'Effective Maintenance of CNC Machines for Productivity

Improvement' were organized at Bangalore from 19 to 21 December 2011 and in Gurgaon on 23 December 2011.

Right Selection and Application of Tooling for CNC Machining Centres

20 and 21 December 2011 : Gurgaon
30 and 31 January 2012 : Bangalore
24 and 25 February 2012 : Pune
27 and 28 June 2012 : Gurgaon



The right tooling applications boosts the throughput and improves the quality of finished parts drastically by reducing the machining cost by as much as 20%. Keeping this in view, four training programmes on 'Right Selection and Application of Tooling for CNC Machining Centers' were organized. The programmes were scheduled at Gurgaon on 20 - 21 December 2011 and 27 and 28 June 2012; at Bangalore on 30 and 31 January 2012 and in Pune on 24 and 25 February 2012.

Newer manufacturing strategies using Multi tasking and 5 axis CNC machines

22 and 23 December 2011 : Bangalore



In order to stay ahead in time, not just professionals, but even the machines are expected to multitask. Keeping this in view, a seminar on 'Newer manufacturing strategies using Multi tasking and 5 axis CNC machines' was held at BIEC on 22 and 23 December 2011.

Cost Effective Automation for metalworking

13 January 2012 : Pune
05 and 06 March 2012 : Bangalore



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, two seminars on 'Cost Effective Automation for Metalworking' was held in Pune on 13 January 2012 and at Bangalore on 05 and 06 March 2012.

Failure Mode & Effects Analysis (FMEA)

23 and 24 January 2012 : Bangalore
09 and 10 February 2012 : Gurgaon
13 and 14 March 2012 : Pune
20 and 21 April 2012 : Bangalore



The industry has realized the importance of the fact that servicing unreliable products is a very costly proposition. To a large extent, reliability is built into the product during the design and development phase. Keeping pace with this raising industry demands, four interactive workshops on 'Failure Mode and Effects Analysis (FMEA)' were organized at Bangalore on 23 and 24 January 2012 and 20 and 21 April 2012; in Gurgaon on 09 and 10 February and in Pune on 13 and 14 March 2012.

Calibration of Dimensional Measuring Equipment & Evaluation of Uncertainty in Measurements

24 and 25 January 2012 : Gurgaon
12 and 13 June 2012 : Pune



The use of good practice such as traceable calibration, careful calculation, good record keeping, can reduce measurement uncertainties. In order to understand the basics to actually estimate the measurement uncertainty for different types of measurements and to expose the participants to the concepts of measurement uncertainty, two workshops on 'Calibration of Dimensional Measuring Equipment and Evaluation of Uncertainty in Measurements' was held at New Delhi on 24 and 25 January 2012 and in Pune on 12 and 13 June 2012.

Design Awareness Seminar

13 March 2012 : Bangalore

The Design Clinic Scheme focused at bringing the industry sector and design expertise on a common platform and provides expert advice and solutions on real time design problems, resulting



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in continuous improvement and value addition for existing products. Keeping this in view, a seminar on Design Clinic Scheme (DCS) which was supported by NID and Ministry of MSME, Govt. of India was organized at Bangalore on 13 March 2012.

Programming and Operation of CNC Machining Centres

12 to 16 March 2012 : Bangalore

18 to 22 June 2012 : Bangalore



Thorough understanding of Programming and Operation of the CNC machines is a must in order to realize the maximum output. Keeping this in view, a comprehensive five day workshop on 'Programming and Operation of CNC Machining Centres' were organized twice at Bangalore from 12 to 16 March 2012 and from 18 to 22 June 2012.

Programmable Logic Controller (PLC) Technology in Industrial Automation

16 March 2012 : Bangalore

The Programmable Logic Controller (PLC) is a Powerful Automation tool and its role is of paramount importance as the production process goes through a fixed repetitive sequence of



operations that involve logical steps and decisions. To understand the applications of PLC, a seminar on 'Programmable Logic Controller (PLC) Technology in Industrial Automation' was held at Bangalore on 16 March 2012.

Six Sigma Approach

17 March 2012 : Bangalore



The Association organized a programme focused on "enhancing performance of the coolant and swarf management systems on machine tools through Six-sigma approach". The programme was launched in May 2011 and concluded on 17 March 2012.



An extensive methodology was followed in the programme which included involvement of the senior management through interactions before starting the project, identification of one project

per company covering problems faced on coolant systems, detailed analysis of the problem and solution generation.

Design of Experiments

20 and 21 March 2012 : Bangalore

04 and 05 May 2012 : Gurgaon

26 and 27 June 2012 : Pune

Design of Experiments (DoE) presents techniques for finding out those inputs which have maximum influence on the output through a minimum set of experiments. Keeping this in view, a workshop on 'Design of Experiments' (DoE) was organized at Bangalore on 20 and 21 March 2012, in Gurgaon on 04 and 05 May 2012 and in Pune on 26 and 27 June 2012.

Value Engineering and Value Analysis

12 April 2012 : Bangalore

15 May 2012 : Gurgaon



The increasing customer demands, continuing material price increase, cost reduction and increased competition are majorly affecting the profitability. Recognizing this need for value

engineered products gaining importance, two seminars on 'Value Engineering and Value Analysis: how to reduce the manufacturing cost without affecting the function' was organised at Bangalore on 12 April 2012 and in Gurgaon on 15 May 2012.

Design and Processing of Injection Moulded Components

16 March 2012 : Pune

12 April 2012 : Gurgaon



Every designer focuses at designing a product, the goal of any designer is to see that the product meets the requirements of its fit, form and function. Honing the skills of these designers, so as to get a component to the acceptable level in the first trial and minimum changes at a later stage, two seminars on Design and Processing of Injection Moulded Components were organized in Pune on 16 March 2012 and in Gurgaon on 12 April 2012.

Acceptance and Testing of CNC Machines

18 April 2012 : Gurgaon

Testing of CNC Machines are necessary for optimal utilisation of machines which in turn will help prevent unexpected breakdowns and errors. This can be categorized broadly into three areas namely Geometrical Alignment tests, Functionality test and Machining Accuracy test. Keeping this in view, a workshop on Acceptance and Testing of CNC Machines was organized in Gurgaon on 18 April 2012.



ACTIVITIES DURING 2011 - 2012

Applications of Lasers in metal working

20 April 2012 : Pune



Laser technology has introduced significant advantages as well as new possibilities in cutting, joining, milling and drilling. Fibre lasers are relatively new and are much more energy efficient. Many aspects of laser technology was discussed and debated in the seminar on 'Lasers in metal working' held in Pune on 20 April 2012.

Hydroforming and its applications

24 April 2012 : Pune

Hydroforming is considered as one of the prominent and niche technologies to deliver lightweight components. 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, a seminar on 'Hydroforming and its applications' was organized in Pune on 24 April 2012.

Calibration of CNC Machine Tools

25 April 2012 : Bangalore



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. Keeping this in view, a workshop on 'Calibration of CNC Machine Tools' was held at Bangalore on 25 April 2012.

Servo Technology for Industrial Motion Control

11 May 2012 : Bangalore



The conventional methods of Industrial Motion Control Drives are rapidly getting replaced by the General Purpose Servo Motor Technology all over the World. Understanding the growing need of this technology, a seminar on 'Servo Technology for Industrial Motion Control' was organized at Bangalore on 11 May, 2012.

Industrial Cleaning Processes for Machined Components

15 May 2012 : Bangalore



Owing to the constantly increasing requirements in terms of efficiency, quality and environmental protection, the cleaning of industrial parts has become essential in modern manufacturing

processes. Cleaning is usually considered as a non value adding process without evaluating the consequences of ignoring component cleaning. Keeping this in view, and highlighting its importance, a seminar on 'Cleaning of machined components' was held at Bangalore on 15 May 2012.

The system Approach to precision manufacturing - Grinding Processes

22 to 25 May 2012 : Bangalore



The System Approach is an approach parallel to and possibly the next wave for manufacturing innovation after Lean and Six Sigma. This process is widely used in many manufacturing industries and keeping its wide application in view, a workshop on 'The system Approach to precision manufacturing - Grinding Processes' was held at Bangalore from 22 – 25 May 2012.

How to improve the accuracy of machine tools

15 June 2012 : Bangalore



With proper implementation of direct position measurement feedback systems, on linear and angular axes, most thermal errors in the position loop

can be eliminated. Keeping this in view, a seminar on 'How to improve the accuracy of Machine tools' was held at Bangalore on 15 June 2012.

Manufacturing Automation Using Robots

26 June 2012 : Bangalore



Though the robotic revolution in India is driven by the automotive industry, other applications like – machine tending, foundry, medical components processing, etc., are also growing. Keeping this in view, a seminar on 'Manufacturing Automation using Robots' was held at Bangalore on 26 June 2012.

Customized Inhouse Training Programmes

10 to 04 November 2011 :
Meritor CVS, Bangalore

09 to 12 November 2011 :
Mapal India, Bangalore

10 to 28 December 2011 :
Mercedes Benz, Bangalore

The Association develops and delivers specific courses customised as per the requirements of the industries. The programmes are custom made as per the requirements of the particular company. Three programmes on 'Geometric Dimensioning and Tolerancing in Design through Manufacturing' were organized at Meritor CVS, Bangalore from 10 to 04 November 2011 ; at Mapal India, Bangalore from 09 to 12 November 2011 and at Mercedes Benz, Bangalore from 10 to 28 December 2011. A programme on 'Idle Time Reduction in metal cutting through quick changeover techniques' was scheduled at Maruti Suzuki, Manesar on 16 March 2012.



ACTIVITIES DURING 2011 - 2012

Technology Missions to Germany coinciding with EMO 2011 Exhibition at Hannover, September 2011

As part of the UNIDO-ICAMT and IMTMA's joint project on Technology Upgrading and Productivity Enhancement (TUPE), two Technology Missions to Germany coinciding with the EMO 2011 were scheduled. The first Technology Mission was scheduled from 14-24 September 2011 comprising 19 delegates from 15 companies representing OEM and accessory manufacturers. The second Technology Mission was scheduled from 20-30 September 2011 and comprised of 10 delegates representing 10 companies.

The mission included visits to leading German Machine tool manufacturers, components and accessory manufacturers such as EMAG, Trumpf, DMG, Festo, Sauter and SMW Autoblok, to understand global manufacturing practices. Visits to Fraunhofer Institute in Stuttgart and Berlin were also arranged to understand ongoing Research & Development projects in the field of machine tools.



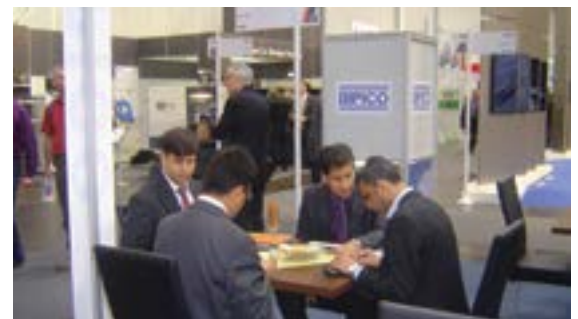
Building 'Made in India' Brand @ EMO 2011 Exhibition, Hannover, Germany

A large Indian contingent of 24 companies participated at EMO 2011, with displays including both entry-level and high-end machines, turning centres, machining centres, grinding machines, tool turrets and automatic tool changers, cutting tools and a host of machine tool accessories.

IMTMA made novel attempts to strongly emphasize the "Made in India" brand during the EMO 2011 exhibition in Germany. IMTMA's initiative included publicity strategies to attract maximum media attention. As part of this initiative, IMTMA provided pointers on preparing Media kits, Press notes, Press Guides, leveraging EMO website, display of press-kits at Press Center and so on.

IMTMA strongly projected the Indian machine tool market scenario India at the Networking meeting organized by CELIMO - European Association for Machine tools, tooling and technologies; to attract attention of international distributors

IMTMA also had an information booth in the exhibition to support its efforts in ensuring a strong Indian presence.



Advanced Machine Tool Testing Facility (AMTTF)

(A Joint Project of Government of India and Industry)



Advanced Machine Tool Testing Facility (AMTTF) has started activities in Bangalore. The infrastructure augmentation (Civil & Electrical) and Test beds assembly have been completed and general equipments / instruments have been procured. Six test assignments have been completed. Industry is utilizing the services of Advanced Machine Tool Testing Facility.



SPECIAL EVENTS

Interactive Meeting and Plant Visit to JCB India

As part of its focus on having a much closer partnership with customers, members of IMTMA Regional Council (North) organised an interactive meeting and plant visit to JCB India Limited on 26 August 2011 in Ballabgarh.

JCB India made an exhaustive presentation about its organisations, its multifarious manufacturing facilities and their future objectives. IMTMA Regional Council (North) members were informed about JCB being the world's largest backhoe manufacturing plant.

On expectations from machine tool industry, executives from JCB mentioned about improvements in machining capability, need to move towards advance technologies and enhancement in technology levels.

Interactive Meeting and Plant Visit to Hero Cycles Limited

IMTMA Regional Council (North) scheduled its 17th meeting Ludhiana along with a visit to the facilities of the world's largest cycle company – Hero Cycles Limited. The programme was scheduled on 09 December 2011 in Ludhiana.

Welcoming IMTMA Regional Council (North) members, Mr. O. P. Munjal, Chairman, Hero Cycles spoke about the ethos of his organisation, which centred around people focus; commitment to innovation, quality and technological excellence and R&D philosophy of zero-defect approach. With an annual output of 5.5 million cycles, Hero is set to tap the future market of aluminium cycles.

IMTMA Regional Council (North) members were shown around the expansive facilities of the global company and were encouraged to partner in their progress.

Workshop and Interactive Session on 'Theory of Constraints'

Theory of Constraints (TOC) is based on the assumption that any system, no matter how complex it seems, is governed by just a few elements. Identifying the system's constraints and managing them accordingly produces fast paced results throughout the system.



Understanding the importance of TOC for the industry, a workshop and an interactive session on Theory of Constraints (TOC) was organized before the commencement of the Annual Session on 08 September 2011 at Bangalore. The event was facilitated by Mr. Prabhakar Mahadevan, Regional Director and Mr. R. Srinivasagopal, Viable Vision Expert, from Goldratt Consulting.

The workshop dealt with the concept of Theory of Constraints, along with discussions on the goal of a company, understanding the 'Strategy & Tactics' tree, bridge to viable vision and path to become a flourishing company.



ACTIVITIES DURING 2011 - 2012

Technology Mission to Korea and SIMTOS 2012 at Seoul, Republic of Korea

As part of the UNIDO-ICAMT and IMTMA's joint project on Technology Upgrading and Productivity Enhancement of the Machine tool Industry in India, a Technology Mission to Korea and Seoul International Manufacturing Technology Show - SIMTOS 2012 was organised from 15 to 21 April 2012 where the recent and latest technologies of machine tools and manufacturing technology were on view.

The exhibition, upgraded from machine tool show to a manufacturing technology show, was organised by KOMMA (Korea Machine Tool Manufacturers' Association). The visit to SIMTOS was followed with interactive meetings and visit to SIMPAC, YG - 1 and Namsun Machinery Corporation along with interaction with Korea Machine Tool Manufacturers' Association (KOMMA).

CEO's Delegation to Korea and Taiwan

In order to facilitate business opportunities between India, Korea and Taiwan, the Association organised the visit of a high-level delegation of CEOs of Indian machine tool companies to Korea and Taiwan from 19 to 25 April 2012. The visit coincided with Seoul International Manufacturing Technology Show - SIMTOS 2012.



The meetings and interactions enabled the participating delegates to closely observe the Korean and Taiwan Machine Tool industry, their operations and understand the reasons for their phenomenal growth. The companies visited included -Hyundai WIA Corporation, Doosan Infracore Company limited, Industrial Technology

Research Institute (ITRI), Keyarrow (Taiwan) Company Limited, DAH LIH Machinery Industry Company Limited, HPB Motion Control Company Limited, Taiwan Yuken Hydraulic Company Limited, Hiwin Technologies Corporation. The visiting Indian CEOs also had interactions with Industrial Development Bureau, Ministry of Economic Affairs, Taiwan, Korea Machine Tool Manufacturers' Association, Taiwan Association of Machinery Industry and India - Taipei Association.

IMTMA – Vinod Doshi Outstanding Entrepreneur Award

The third 'IMTMA - Vinod Doshi Outstanding Entrepreneur Award in Machine Tools' was bestowed on Mr. N. K Dhand, Micromatic Grinding Technologies. The award was conferred by Mr. K. Kasturirangan, Member, Planning Commission of India at the inauguration ceremony of IMTEX FORMING 2012 and Tooltech 2012.



Mr. Dhand was recognised for his entrepreneurial achievements and for his immense contribution towards enhancing competitiveness of the metalworking machine tool industry in India and showing an outstanding record of first generation entrepreneurship in building machine tool companies in India.

IMTMA – BFW Lifetime Contribution Award

The fourth 'IMTMA – BFW Lifetime Contribution Award in memory of Late H. R. Gupta was conferred on Mr. C. P. Rangachar, Yuken India. The award was conferred by Mr. K. Kasturirangan, Member, Planning Commission of India at the inauguration ceremony of IMTEX FORMING 2012 and Tooltech 2012.



Mr. Rangachar was recognised for his immense, proactive and visionary contribution to the development of the Indian machine tool industry. He is distinguished for his untiring involvement in enhancing the overall competitiveness of the industry.

4th Jagruti – IMTMA Youth Programme

IMTEX FORMING 2012 and Tooltech 2012 turned out to be a virtual classroom for 27 Engineering students from 11 Institutions who were part of the 4th Jagruthi – IMTMA Youth programme. The students were taken around the exhibition to closely understand the technology and industry. On the whole, the visit enabled fresh engineering students to touch and test the latest technology innovations under one roof.



Interactive meeting and plant visit to Rittal India

A meeting of Regional Council South (RCS) was held on 25 January 2012 coinciding with a plant visit to Rittal India Pvt. Ltd, Doddaballapur. The representatives of Rittal India Pvt. Ltd. made presentations on Rittal Solutions & Product Applications for Machine Tool Industry and Practical Demonstration of solutions for the Machine Tool Industry. These presentations were

followed by a detailed plant visit where members could witness one of the most modern facilities for the production of Industrial Enclosures, Electronic Packaging, System Climate controls.



Interactive Meeting and Plant Visit to Bharat Fritz Werner

The next RCS was held on 15 June 2012 coinciding with a visit to Bharat Fritz Werner (BFW). A presentation by BFW enabled the participants to take a closer look at BFW's Journey of Excellence over its 50 years of operations, key milestones, and the range of impressive product lines developed by the company.



Following these presentations, a detailed visit was made to Bharat Fritz Werner's plant, where members could witness state-of-the-art facilities for manufacturing of CNC Vertical Milling machines, CNC Vertical and Horizontal Machining centers, CNC Vertical lathes, Knee-type Milling machines etc.

Interactive meeting between the Machine Tool Manufacturers (MTMs) and Suppliers of Telescopic Covers

To discuss and resolve various issues of concerns raised by MTMs vis-à-vis the quality, reliability, design, mounting and assembly and delivery of



ACTIVITIES DURING 2011 - 2012



telescopic covers, guideways and bellow covers, the Association organized an interactive meeting between the Machine Tool Manufacturers (MTMs) and Suppliers of Telescopic Covers on 20 December 2011 at Bangalore.

Interactive Meeting between Machine Tool Manufacturers and Suppliers of Panel Air-conditioners in Bangalore on 10 April 2012.

In order to avail improved service support to MTMs, on various aspects of Panel Air conditioner Suppliers, the Association organized an interactive meeting between Machine Tool Manufacturers (MTMs) and Suppliers of Panel Air-conditioners at Bangalore on 10th April 2012.

The main issues related to design, compressors, fan assembly, quality and reliability along with other issues associated with panel air-conditioners were discussed. Towards the end of the discussions, Suppliers expressed that all major queries raised during the discussions could be resolved through greater collaboration between MTMs and the Suppliers.

Interactive session between IMTMA members and visit of CELIMO delegates

A three member delegation representing CELIMO – European Association for Machine Tools, Tooling and Technologies visited IMTEX FORMING 2012 to explore business opportunities with Indian companies. Representatives from Omnitechnique,



France, Star Micronics GB, U.K and Synergon s.p.a., Italy were part of the delegation who showed keen interest in sourcing Indian machine tools.

An interactive session between Indian companies and CELIMO delegation followed. CELIMO delegates briefed Indian companies on entry level strategies into European markets and how the Indian companies could sustain long term business relationships with European distributors. CELIMO delegation during their visit witnessed the latest technological manifestations on display at IMTEX FORMING 2012 and observed the ground realities of Indian Machine Tools by visiting some of the machine tool manufacturing plants in Bangalore.

Interactive Meet with HR Professionals

In order to bridge the knowledge gap in the industry, IMTMA provides an approach to learning based on industry needs with emphasis on hands-on training. The Association has been constantly contributing skilled and well trained professionals to support the manufacturing industry and enhance its competitiveness and growth through technology, productivity and quality.

With a view to capture the training needs of companies, an interactive session with HR and training managers of the machine tool manufacturing and user industries was scheduled in Nashik on 14 February 2012 and in Bangalore on 14 April 2012.

This unique initiative brought to the fore the specific training requirements of the industry, shedding light on some of the untapped topics.

The Bangalore International Exhibition Centre (BIEC) has been considered as one of the modern exhibition facilities for industrial exhibitions in the country today.

In 2011-2012, apart from IMTMA's own exhibition - IMTEX Forming 2012, BIEC hosted more than 25 shows including EXCON (construction machinery), ACREX (air-conditioning, refrigeration and allied Building Services equipment), Indiawood (Wood

machinery), STONA (Stone & Granite equipment), IFEX (Foundry Technology, Equipment Supplies), etc. BIEC is playing a supportive role to the engineering and manufacturing industry sector in the country.

BIEC was also the venue for the Government of Karnataka's prestigious event Global Investors Meet 2012.



78th UFI Congress in Valencia



78th UFI congress was held under a broad theme of "Bridge Continents - Link People" at Feria Valencia from 9 - 11 November 2011 and about 400 delegates and strategic thinkers from the global exhibition industry representing 52 countries gathered to share their professional views. With extensive networking, meeting and branding opportunities, BIEC marked a strong presence at the 78th UFI congress and also was the dinner sponsor for the event.





UFI Open Seminar in Asia 2012, Shenzhen, China



Over 225 delegates participated at the 7th UFI Open Seminar in Asia in Shenzhen, China which was held from 23-24 February 2012. The seminar theme was "Asian Exhibitions in the Year of the Dragon." Many of the presentations focused on opportunities stemming from continued growth in Asian exhibition markets. BIEC participated in the event.

2nd IEIA Open Seminar

2nd IEIA Open Seminar of the Indian Exhibition Industry was held from 26-27 April 2012 in Mumbai. Over 250 professionals from leading exhibition companies attended this event. BIEC was the Dinner Sponsor of the event.



The recovery that wasn't in store for global manufacturing didn't seem to reflect on its machine tool industry, which recorded a phenomenal growth of 34 % on a turnover valuing 93 billion US Dollars in calendar year 2011. The most encouraging bit being that global consumption, exports and imports also grew at almost the same rate – clearly showcasing the 'killer instinct' of the world machine tool industry during January - December 2011. If the going gets equally good, 2012 is likely to witness the machine tool industry crossing the 100 billion US Dollar mark for the first time in history.

Global Production

It was China dominance all the way through with a surge in turnover and a share of over 30 % in the total machine tool turnover. And along with the other four Asian majors – Japan, Korea, Taiwan (ROC) and India, the share notched up to 62 % of the total global metalworking machine tool production in 2011. In spite of the unfortunate Tsunami, Japanese machine tool manufacturers fared very well to demonstrate an over 50 % growth in output.

The third largest machine tool manufacturing country – Germany fared equally well with a +40 % growth, notwithstanding the not-so-positive conditions in European Union. So also were the cases of Switzerland, Italy, Spain and United Kingdom.

The dramatic recovery was that of United States of America, which too recorded significant gains to regain the slot of the seventh largest manufacturing country.

Share of Asian countries in global production increased to 62 % in 2011 and is well on course to achieving a two-third share within the next year.

All in all, 2011 was a remarkable year, with high growth for most of the machine tool manufacturing countries of the world.

The Asian belt will continue to be the global attraction vis-à-vis the machine tool industry – with expectations high of a better performance by all its manufacturing countries in 2012 calendar year.

World Trade

Exports of metalworking machine tools by 28 countries in 2011 totalled 45.7 billion US Dollars, generating a mighty 37.3 % growth over the previous year.

Japan continued its dominance over the export front, followed closely by Germany. And together with Italy, the three countries accounted for more than half of the global machine tool exports in 2011. A further feather on Japan's cap was that it registered over 50 % growth in its exports in comparison to 2010.

There was good news on the import front too with a 38 % growth on total imports worth 38.2 billion US Dollars in 2011. The world's most voracious importer happened to be China with more than one-third share; followed by United States of America, Germany and India (now as the world's fourth largest importer). All the top four countries registered an over 40 % growth in their respective imports in 2011 in comparison to the previous year.

Overall Consumption

The global industry consumed 86.3 billion US Dollars worth of metalworking machine tools in 2011, and registered a growth of 34 % over the previous year. China, as always, led the pack with a stupendous share of over 45 % of the total consumption and averaging a 33 % growth.

Other big consumers – Japan, Germany and United States of America also reported quantum growth in their respective machine tool markets. India with three per cent global share occupies seventh largest position in the world.

The top seven countries cornered a little over 82 % of the global machine tool consumption during January - December 2011. Share of Asian countries amounted to almost two-thirds in the global consumption of metalworking machine tools.



GLOBAL MACHINE TOOL PRODUCTION

Annual Report 2011- 2012

Rank	Country	2011			2010	Change in US Dollars
		(Value in US \$ million)			(Value in US \$ million)	
		Total	Cutting	Forming	Total	
1.	People's Republic of China	28,277.1	70 %	30 %	21,858.9	29 %
2.	Japan	18,353.1	89 %	11 %	11,971.4	53 %
3.	Germany	13,494.7	74 %	26 %	9,488.8	42 %
4.	Italy	6,232.6	49 %	51 %	5,017.9	24 %
5.	Republic of Korea	5,641.0	69 %	31 %	4,498.0	25 %
6.	Taiwan (ROC)	5,000.0	80 %	20 %	3,877.0	29 %
7.	United States of America	4,161.1	73 %	27 %	3,340.1	25 %
8.	Switzerland	3,462.7	84 %	16 %	2,395.2	45 %
9.	Spain	1,053.3	64 %	36 %	836.9	26 %
10.	Austria	1,001.8	54 %	46 %	844.0	19 %
11.	France	930.7	61 %	39 %	662.2	41 %
12.	India	875.0	87 %	13 %	769.0	14 %
13.	Brazil	873.4	81 %	19 %	837.4	4 %
14.	Turkey	668.0	25 %	75 %	555.0	20 %
15.	United Kingdom	658.0	72 %	28 %	507.2	30 %
16.	Canada	639.3	60 %	40 %	546.8	17 %
17.	Czech Republic	620.5	80 %	20 %	492.6	26 %
18.	Netherlands	400.7	20 %	80 %	317.8	26 %
19.	Belgium	375.6	20 %	80 %	298.0	26 %
20.	Russia	263.0	41 %	59 %	219.0	20 %
21.	Sweden	218.4	38 %	62 %	207.9	5 %
22.	Finland	166.9	20 %	80 %	135.1	24 %
23.	Mexico	122.4	58 %	42 %	165.5	- 26 %
24.	Australia	100.9	86 %	14 %	113.6	- 11%
25.	Denmark	76.5	40 %	60 %	72.8	5 %
26.	Portugal	73.7	21 %	79 %	66.2	11 %
27.	Romania	42.5	71 %	29 %	42.5	0 %
28.	Argentina	32.3	50 %	50 %	29.0	11 %
Total		93,815.3			70,165.8	34 %

Credit & Source : Gardner Publications, Inc.

GLOBAL MACHINE TOOL CONSUMPTION



Annual Report 2011 - 2012

Rank	Country	2011	2010	Change in US Dollars
		(Value in US \$million)		
1.	People’s Republic of China	39,099.2	29,423.0	33 %
2.	Japan	7,620.5	4,889.8	56 %
3.	Germany	6,956.0	4,677.5	49 %
4.	United States of America	6,611.9	4,313.4	53 %
5.	Republic of Korea	5,131.0	4,264.0	20 %
6.	Italy	2,963.3	2,672.5	11 %
7.	India	2,638.0	2,021.0	31 %
8.	Brazil	1,990.0	1,861.3	7 %
9.	Taiwan (ROC)	1,800.0	1,623.0	11 %
10.	Mexico	1,360.9	1,060.4	28 %
11.	Russia	1,317.0	1,165.0	13 %
12.	Turkey	1,285.0	864.9	49 %
13.	Switzerland	1,240.7	850.5	46 %
14.	France	1,182.5	850.2	39 %
15.	Canada	1,143.6	848.8	35 %
16.	Austria	632.2	446.3	42 %
17.	United Kingdom	561.7	422.1	33 %
18.	Spain	451.5	473.4	- 5 %
19.	Czech Republic	404.8	172.2	135 %
20.	Sweden	372.8	259.6	44 %
21.	Netherlands	328.3	256.9	28 %
22.	Belgium	301.9	252.9	19 %
23.	Romania	243.0	243.0	0 %
24.	Argentina	211.5	146.3	45 %
25.	Australia	167.0	220.9	- 24 %
26.	Finland	128.0	108.6	18 %
27.	Portugal	104.3	115.2	- 9 %
28.	Denmark	43.1	41.1	5 %
Total		86,289.7	64,543.80	34 %

Apparent Consumption = Country's Production less Exports plus Imports.

Credit & Source : Gardner Publications, Inc.



TRENDS IN INDIAN MACHINE TOOL INDUSTRY

Annual Report 2011-2012

Production of Metalworking Machine Tools

	Years					
	2009-10		2010-11		2011-12	
Machine tool segments	Qty.	Value (in Rs. million)	Qty.	Value (in Rs. million)	Qty.	Value (in Rs. million)
Metal-Forming	879	3951	1841	4625	2139	5039
CNC	312	580	1103	2967	1116	3322
Conventional	567	3371	738	1658	1023	1717
Metal-Cutting	10569	20892	15329	31613	16137	37952
CNC	6690	16265	12212	27037	13265	32486
Conventional	3879	4627	3117	4576	2872	5466
Total Metalworking of which	11448	24843	17170	36238	18276	42991
CNC	7002	16845	13315	30004	14381	35808
Conventional	4446	7998	3855	6234	3895	7183

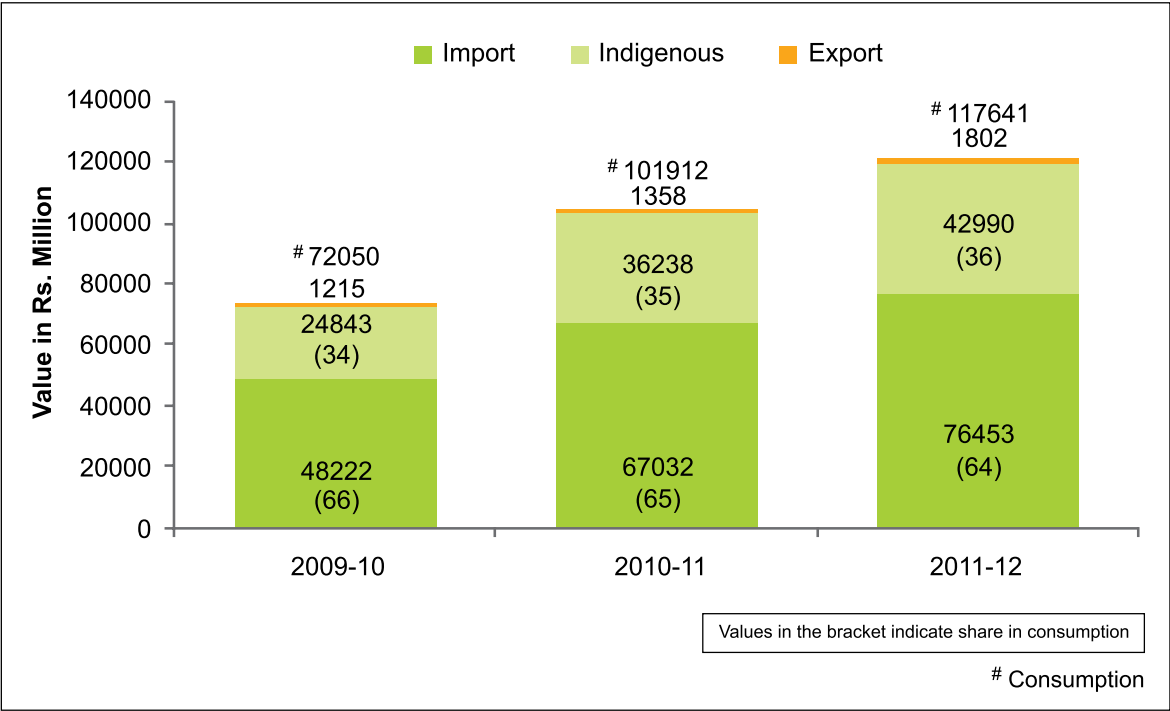
Export of Metalworking Machine Tools

	Years					
	2009-10		2010-11		2011-12	
Machine tool segments	Qty.	Value (in Rs. million)	Qty.	Value (in Rs. million)	Qty.	Value (in Rs. million)
Metal-Forming	15	374.745	68	93	54	228
CNC	0	0	47	64	27	155
Conventional	15	375	21	29	27	73
Metal-Cutting	197	840	413	1264	529	1574
CNC	138	786	312	956	425	1283
Conventional	59	54	101	308	104	291
Total Metalworking of which	212	1215	481	1358	583	1802
CNC	138	786	359	1020	452	1438
Conventional	73.5	429	122	337	131	364
Members reporting data	79		89		71	

NOTE: DATA IS ADJUSTED FOR NON REPORTING UNITS FOR ALL THE YEARS



Indian Machine Tool Industry 2009-10 to 2011-12





NEW PRODUCTS DEVELOPED BY MEMBERS IN 2011 - 2012

ABHIJAT EQUIPMENTS PRIVATE LIMITED

- CNC second-operation lathe nominal dia 32 mm [Model Autocut 32].
- CNC lathe with live C-axis [Model Deepak 42].
- CNC lathes with low-cost Siemens [Model Lathe Deepak E 32].

Amount spent on R&D : Rs. 0.8 million.

ACE DESIGNERS LIMITED

- Cub automation with new concept
- Vertical turning centre with gear box [Model VTL-40]

Amount spent on R&D : Rs. 60.4 million.

ALEX MACHINE TOOLS

- High-precision wide-width reciprocating surface grinder (1,200 x 600 mm) [Model BW 1200].
- Mid-range reciprocating surface grinder (800 x 400 mm) [Model NH 800].
- High-precision big-size creep feed surface grinder with complete 3-axis CNC control (1,000 x 500 mm) [Model BW CFG 1000].
- Small-size rotary surface grinder with vertical head for single pass grinding (500 mm) [Model R 20 - A].
- Rotary surface grinder with two vertical spindles for high-production, single pass grinding (1200 mm) [Model R 40 - A 2].

Amount spent on R&D : Rs. 15.0 million.

AVCON CONTROLS PRIVATE LIMITED

- Solenoid valves [Model 9900 Economic Series].
- Control valves [Model 5616 G Series].

BATLIBOI LIMITED

- CNC vertical machining centre [Model Chetak - 125 MC].
- CNC turning centre [Model Sprint 20 TC Junior].
- CNC travelling-column drilling machine 60 mm drill [Model BMCD - 624].
- CNC travelling-column drilling machine 80 mm drill [Model BMCD - 825].
- CNC travelling-column drilling machine 100 mm drill [Model BMCD - 1030].

Amount spent on R&D : Rs. 23.0 million.

BHAGWANSONS

- High-speed 7-axis grinding machine [Model CNC - 200].

Amount spent on R&D : Rs. 1.0 million.

BHARAT FRITZ WERNER LIMITED

- CNC vertical turn-mill centre [Model BVL 800 - ML].
- Two-way 2-station shuttle-type multi-spindle drilling and tapping machine.
- Two-spindle vertical boring machine.
- Two-way plunge facing and centering machine.
- CNC vertical finish milling machine.
- Two-way camber and toe milling machine.
- Motorised spindle [Model 15 K BT 40].
- Coolant-through spindle [Model 10 K HSK 63].

Amount spent on R&D : Rs. 26.5 million.

BOMBAY MACHINES

- Two-spindle gun drilling machine, for 16-cylinder V-engine block.
- CNC cheek milling and notch milling machine, for 16-cylinder V-engine block.
- CNC half-crank and cam boring machine, for

NEW PRODUCTS DEVELOPED BY MEMBERS IN 2011 - 2012



16-cylinder V-engine block.

- CNC head face milling and liner boring machine, for 16-cylinder V-engine block.
- Two-sided milling special purpose machine, for shifter forks.
- CNC groove milling machine, for rollers.
- CFRP cutting machine, for composite cutting.

Amount spent on R&D : Rs. 15.0 million.

ELECTRONICA MACHINE TOOLS LIMITED

- CNC 5-axis wirecut electro-discharge machine [Models ULTIMA 0F and ULTIMA 0S].
- CNC 5-axis special purpose wirecut electro-discharge machine, for cutting aerospace components.
- Four electro-discharge machine head with rotary table special purpose machine, for cutting turbine blades.

Amount spent on R&D : Rs. 12.6 million.

ELECTROPNEUMATICS & HYDRAULICS (INDIA) PRIVATE LIMITED

- Robotic bender.
- 5-axes CNC tube bender [Model 65 CNC 5 X 3].
- 110 T C frame servo mechanical press.
- 200 T straight-sided servo mechanical press.

Amount spent on R&D : Rs. 85.0 million.

ELSCINT AUTOMATION

- Elscint ball sorting and grading machine.
- Elscint vibratory counting and dispensing system for screws.
- Elscint vision inspection system, for small battery parts.
- Elscint high-speed vibratory feeder, for plastic spouts with cap forward.

- Vibratory equipment, for feeding of ball-pins of various sizes.

- Elscint vibratory bowl, feeder for engine valve collets.

- Elscint vibratory bowl feeder with hopper elevator, for feeding razor cartridges.

- Elscint "O ring" stacking machine.

- Vibratory bowl feeder, for flat drippers.

- Elscint vibratory bowl feeder, for toothbrush covers.

Amount spent on R&D : Rs. 1.5 million.

FERROMATIK MILACRON INDIA PRIVATE LIMITED

- Two platen maxima large tonnage machine [Model 2500 T].
- Two platen maxima servo power machine [Model 650 T and 1000 T].
- All electric machine [Model Elektron 200 T and 275 T].
- Vertical two component electric injection unit.

I S G E C

- Servo press [Model MAS series].
- Chassis press.

Amount spent on R&D : Rs. 25.0 million.

JYOTI CNC AUTOMATION PRIVATE LIMITED

- Twin-spindle, twin-turret turn mill centre [Model TMX 200]
- Small universal machining centre [Model MU Tech 6]
- Heavy-duty turning centre [Model - DX 750 - 3000]
- Motorised spindles for horizontal machining centres.
- Rotary table for universal machining centres.
- Heavy-duty double-column machining centres (range extension of NX series machines).



NEW PRODUCTS DEVELOPED BY MEMBERS IN 2011 - 2012

- Five-axis CNC machining centres (range extension of EX series machines).

KHUSHBU ENGINEERS

- CNC single pass single-spindle vertical honing machine [Model SP VH 25].

Amount spent on R&D : Rs. 0.5 million.

L&T PLASTICS MACHINERY LIMITED

- Two platen injection moulding machine (450 / 4,000 ton) [Model 2-Tech].
- All electric injection moulding machine (160 ton) [Model e-Tech].
- Injection moulding machine with servo (800 ton and 1,000 ton).

Amount spent on R&D : Rs. 27.5 million.

LOKESH MACHINES LIMITED

- CNC line-boring machine with work changer and in-process gauging.
- CNC finish milling and barrel boring with in-process gauging and auto-tool wear compensation.
- CNC special broaching machine, for cylinder-block bearing cap.
- CNC 3-axis work changer.

Amount spent on R&D : Rs. 4.8 million.

MTE INDUSTRIES PRIVATE LIMITED

- CNC rack-type spline rolling machine.
- CNC face milling and centre drilling machine.
- Rolled ball-screws.

Amount spent on R&D : Rs. 15.0 million.

MICROMATIC GRINDING TECHNOLOGIES LIMITED

- CNC internal grinder [Model IG - 50].
- Crankshaft journal grinder [Model Rhino R - 120].

- Crankshaft pin grinder [Model Rhino R - 80].
- SM-40 with gantry automation.
- CBN grinder special purpose machine, for cam grinding [Model IG - 50].
- Special purpose machine with twin robots, for auto loading and unloading.

Amount spent on R&D : Rs. 9.7 million.

NRB BEARINGS LIMITED

- CAM followers.

Amount spent on R&D : Rs. 51.7 million.

PRECIHOLE MACHINE TOOLS PRIVATE LIMITED

- Micro gun-drilling machine of dia 1.5 to dia 6 up to 600 mm deep.
- 3-axis CNC gun-drilling machine of dia 5 to dia 25 up to 1,000 mm deep.
- Skiving and burnishing machine of dia 25 to dia 150 up to 3,000 mm deep.
- 4-spindle 2-way gun-drilling special purpose machine.
- 4-spindle gun-drilling machine with total automation, for loading and unloading.

PRECITEC PRECISION MACHINERIES PRIVATE LIMITED

- Vertical turning lathe with twin-ram arrangement with new guarding system along with auto job handling system [Model VTL - 800 - 900 - 630 TR].
- Extra heavy-duty floor lathe, for maximum job length 20 metres and maximum job dia 6 metres [Model FL 6].
- CNC special purpose machine, for hub boring [Model MV 50 / SP].
- Precitec 5,000 - 10,000 mm dia insitu flange facing, drilling, milling machine [Model Rotamill - 10000].
- Vertical centrifugal casting machine [Model V - 500].

NEW PRODUCTS DEVELOPED BY MEMBERS IN 2011 - 2012



- CNC vertical drill tap centre [Model VM - 50 - 1100].
- Software for project management information system.

Amount spent on R&D : Rs. 3.7 million.

PREMIER LIMITED

- 6-axes high-speed CNC gear hobbing machine, to accommodate maximum job dia 250 mm, for increasing productivity [Model PHC - 250].
- CNC gear hobbing machines with electronic gear box, to accommodate maximum job dia 630 mm and 900 mm, for increasing productivity [Models PHA - 630 - EGB and PHA - 900 - EGB].
- CNC vertical machining centre with table size 610 x 1,250 having rapid feed rate of 32 m / min, for machining of auto components [Model PVM - 65].

Amount spent on R&D : Rs. 48.0 million.

R. S. HYDRAULICS

- Automatic hydraulic drill machines (cap. 20 mm and 30 mm) [Model 7150].

Amount spent on R&D : Rs. 0.3 million.

RENISHAW METROLOGY SYSTEMS PRIVATE LIMITED

- Strain gauge [Model RMP 600].
- 5-axis touch trigger system [Model PH 20 TM].
- Versatile gauge [Model Equator TM].
- Rotary axis calibrator [Model XR 20 - W KIT].

TRISHUL MACHINE TOOLS PRIVATE LIMITED

- Machine safety guards on polygon turning machine [Model TPT - 2 S].
- Auto loading systems on polygon turning machine [Model TPT - 2 S].

Amount spent on R&D : Rs. 0.5 million.

WENDT (INDIA) LIMITED

- CNC reciprocating table surface grinder [Model WHS].
- CBC roll grinder with complete CNC and wheel calibration and measuring device [Model WGM 35 S].
- Metrologix inspection system, for gear tooth profile [Model WMI].
- Integral spindles speed testing machines [Model WSTM 1000 and WSTM 650].
- Resin bond diamond centreless grinding wheel, for PCD.
- Resin bond spiral grinding wheel, for razor blade grinding.
- Metal bond diamond wheel, for insert grinding.
- Metal bond diamond wheel, for glass grinding.
- Metal bond core drill, for dolomite brick and RCC.
- Electroplated CBN wheel, for surgical-knee joint grinding.
- Precision dressing rolls, for aerospace.
- Precision dressing rolls, for crankshaft, taps and threads.
- Precision dressing Rolls, for CV joint and turbo charger.
- Vitrified CBN wheel, for chilled cast iron cam / journal grinding.
- Vitrified CBN wheel, for cast iron roll grinding, for paper mills.
- Vitrified CBN centreless grinding wheel, for valve stem.
- Vitrified diamond wheel, for PCD / PCBN tool lapping and reconditioning.
- Diamond segment, for disc brake grinding.
- Brazed diamond wheels, for concrete wall grinding, finishing and hacking.
- Brazed diamond tools, for drilling of dolomite bricks.
- PCD guide ring assembly, for taper roller bearing radius lapping.

Amount spent on R&D : Rs. 26.5 million.



ISO CERTIFIED IMTMA MEMBERS

Annual Report 2011-2012

- ◆ Abhijat Equipments Private Limited
- ◆ Abro Balancing Private Limited
- ◆ Ace Designers Limited
- ◆ Ace Manufacturing Systems Limited
- ◆ Airtorq India
- ◆ Apex Industries
- ◆ Arihant Industrial Corporation Limited
- ◆ Artech Welders Private Limited
- ◆ Ashok Manufacturing Company Private Limited
- ◆ Avcon Controls Private Limited
- ◆ Batliboi Limited
- ◆ Bemco Hydraulics Limited
- ◆ Bhagwansons
- ◆ Bharat Fritz Werner Limited
- ◆ Birla Kennametal Limited
- ◆ Bosch Limited
- ◆ Bosch Rexroth (India) Limited
- ◆ CMH Tools Limited
- ◆ Carborundum Universal Limited
- ◆ Crane-Bel International P. Limited
- ◆ Denison Hydraulics India Limited
- ◆ EFD Induction Limited
- ◆ EPE Process Filters & Accumulators Private Limited
- ◆ Electronica Machine Tools Limited
- ◆ Electropneumatics & Hydraulics (India) Private Limited
- ◆ Ferromatik Milacron India Private Limited
- ◆ Fenwick and Ravi
- ◆ Fluid Logic Systems Private Limited
- ◆ Fluro Engineering Private Limited
- ◆ Geeta Machine Tools Private Limited
- ◆ Godrej & Boyce Manufacturing Company Limited
- ◆ HMT Machine Tools Limited
- ◆ Hasolon Nylon Products Private Limited
- ◆ Heavy Engineering Corporation Limited
- ◆ Hi-Life Machine Tools (Private) Limited
- ◆ Hindustan Hydraulics Private Limited
- ◆ I S G E C
- ◆ Imperial Products of India
- ◆ Ind-Sphinx Precision Limited
- ◆ Jyoti CNC Automation Private Limited
- ◆ Jyoti Enterprise
- ◆ Kennametal India Limited
- ◆ Khushbu Engineers
- ◆ Kirpekar Engineering (Private) Limited
- ◆ Kulkarni Power Tools Limited
- ◆ L&T Plastics Machinery Limited
- ◆ Lakshmi Machine Works Limited
- ◆ Lokesh Machines Limited
- ◆ MTE Industries Private Limited
- ◆ Machine Tool Prototype Factory
- ◆ Machine Tools Traders (Madras)
- ◆ Macpower CNC Machines (Private) Limited
- ◆ Micro Engineering Works
- ◆ Micromatic Grinding Technologies Limited
- ◆ Mikronix Gauges Private Limited
- ◆ Miven Mayfran Conveyors Private Limited
- ◆ Modern Machine Tools
- ◆ Modern Precision Tools Private Limited
- ◆ Mogora Cosmic Private Limited
- ◆ NRB Bearings Limited

ISO CERTIFIED IMTMA MEMBERS



Annual Report 2011 - 2012

- | | |
|--|---|
| ◆ Neel Controls | ◆ Shri Balaji Engineering Works |
| ◆ Nugen Machineries Limited | ◆ Speedfam (India) Private Limited |
| ◆ Oriental Engineering Works Private Limited | ◆ State Engineering Corporation |
| ◆ PMT Machines Limited | ◆ Stuser Tools Private Limited |
| ◆ Parishudh Machines Private Limited | ◆ Suhas Hydrosystems Private Limited |
| ◆ Pinnacle Engineering Enterprise | ◆ Sunmas Machine Tools Private Limited |
| ◆ Praga Tools Limited | ◆ TAL Manufacturing Solutions Limited |
| ◆ Prasad NC Machine Systems Private Limited | ◆ TMC Measuring Instruments Private Limited |
| ◆ Precihole Machine Tools Private Limited | ◆ Taegutec India Limited |
| ◆ Premier Limited | ◆ Trishul Machine Tools Private Limited |
| ◆ Presswel Industries | ◆ Uday Computer Aided Manufacturing (Private) Limited |
| ◆ Pricol Limited | ◆ Unique Instruments & Manufacturers Private Limited |
| ◆ Quality Engineering (Baroda) Private Limited | ◆ Unique Saws & Machinery Private Limited |
| ◆ Rattan Hammers | ◆ Uttam Power Tools Private Limited |
| ◆ Ravjeet Engineering Specialities Private Limited | ◆ Wendt (India) Limited |
| ◆ SRB Machines Private Limited | ◆ Yuken India Limited |
| ◆ Sandvik Asia Limited | |
| ◆ Seco Tools India (Private) Limited | |



NEW MEMBERS ENROLLED DURING 2011 - 2012

Annual Report 2011-2012

Members Enrolled from April 2011 to March 2012

BENCO THERMAL TECHNOLOGIES PRIVATE LIMITED

Plot no. 236 & 237
SIDCO Industrial Estate
Thirumudivakkam
Chennai – 600 044
Tamil Nadu.

[Manufacturer : Accessories for machine tools]

CG TECH INDIA SOFTWARE SOLUTIONS PRIVATE LIMITED

#38, 1st Main 3rd Cross
Malagala, Krishan Nanda Nagar
New Outer Ring Road
Bangalore – 560 091
Karnataka.

[Manufacturer : CAD, CAM, Software for machine tools]

DRASS MECHATRONICS & MACHINERY PVT. LTD

782/20-1
1st Floor, 6th Cross
L.N Colony
Yeshwantpur
Bangalore – 560 022
Karnataka.

[Manufacturer : Accessories for machine tools]

DRUPE ENGINEERING PRIVATE LIMITED

B -29/2, MIDC
Taloja District
Raigad
Navi Mumbai – 410 208
Maharashtra.

[Manufacturer : Accessories for machine tools]

EMAG INDIA PRIVATE LIMITED

#17/G/46-3 & 17/G/46-3-1
Industrial Suburb, 2nd Stage
Opp. Hyundai Service Station
Yeshwanthpur
Bangalore – 560 022
Karnataka.

[Distributor : Metal-cutting machine tools]

FARMAX MACHINES PRIVATE LIMITED

No. 89
2nd Cross, 2nd Phase
24th Main, J.P. Nagar
Bangalore – 560 078
Karnataka.

[Distributor : Machine Tools]

GUHRING INDIA PRIVATE LIMITED

Plot No. 129, IV Phase
Bommasandra Industrial Area
Anekal Taluk
Bangalore – 560 099
Karnataka.

[Manufacturer : Cutting tools and tooling systems]

HYT ENGINEERING CO. PRIVATE LIMITED

701, 'A' Block
Navrang House, K. G. Marg
Connaught Place
New Delhi – 110 001
Delhi.

[Manufacturer : Metal-cutting machine tools]

INLAND MACHINE TOOLS

Plot No. 176/1A
Sector 7, PCNTDA
Bhosari
Pune – 411 026
Maharashtra.

[Manufacturer : Accessories for machine tools]

ITT CORPORATION INDIA PRIVATE LIMITED

Plot No. 731
GIDC Manjusr
Savli
Baroda – 391 770
Gujarat.

[Distributor : Metal-cutting machine tools and accessories for machine tools]

JPS CORPORATION

B-29/503
Shaheed Udham Singh Nagar Industrial Estate
Near PSEB Sub Station, Behind Harpreet Gases
Giaspura
Ludhiana – 141 014
Punjab.

[Manufacturer : Metal-forming machine tools]

NEW MEMBERS ENROLLED DURING 2011 - 2012



KABRA EXTRUSIONTECHNIK LIMITED

Kolsite House
Off Veera Desai Road
Andheri (W)
Mumbai – 400 053
Maharashtra.
[Manufacturer : Accessories for machine tools]

KANEFUSA INDIA PRIVATE LIMITED

Plot No. 232
Sector 8, IMT
Manesar
Gurgaon – 122 050
Haryana.
[Distributor : Cutting tools and tooling systems]

KAROLIN MACHINE TOOL PRIVATE LIMITED

Unit No.2 & 3, Ground Floor
Shrishti Plaza, Commercial Building
Indian Cork Mills Compound
Off. Saki Vihar Road
Powai
Mumbai – 400 072
Maharashtra.
[Distributor : Accessories for machine tools]

L & T PLASTICS MACHINERY LIMITED

L&T House
Ballard Estate
P.O. Box – 278
Mumbai – 400 001
Maharashtra.
[Manufacturer : Plastic processing machines]

MAPAL INDIA PRIVATE LIMITED

No. 307 & 308
5th Main, 4th Phase
Peenya Industrial Area
Bangalore – 560 058
Karnataka.
[Manufacturer : Cutting tools and tooling systems]

MEU ENGINEERING

No. 83/2
Doddamma Industrial Layout
Hulimavu, Bannerghatta Road
Bangalore – 560 076
Karnataka.
[Manufacturer : Cutting tools and tooling systems]

MTE INDUSTRIES PRIVATE LIMITED

No. 58/A
S. V. Co-op. Indl. Estate
Balanagar
Hyderabad – 500 037
Andhra Pradesh.
[Manufacturer : Metalworking machine tools and accessories for machine tools]

MULTIDIMENSIONS

No. 139
Narayan Dhuru Street
3rd Floor, 152
Mumbai – 400 003
Maharashtra.
[Distributor : Accessories for machine tools]

PRAKASH ENGITECH PRIVATE LIMITED

Plot No. – 13
Sukh Sagar Society
Vijayraj Nagar
Bhavnagar – 364 001
Gujarat.
[Manufacturer : Metal-cutting machine tools]

RAJOO ENGINEERS LIMITED

Survey No: 210, Plot No-1
Rajoo Avenue, Industrial Area
Veraval (Shapur)
Rajkot – 360 002
Gujarat.
[Manufacturer : Plastic processing machines]

RENISHAW METROLOGY SYSTEMS PRIVATE LIMITED

G.K Arcade, 3rd Floor
#125/1-18
T Mariyappa Road
1st Block, Jayanagar
Bangalore – 560 011
Karnataka.
[Manufacturer : Accessories for machine tools]

TOYODA MICROMATIC MACHINERY INDIA LIMITED

506-507, 5th Floor
Suncity Business Tower
Golf Course Road, Sector 54
Gurgaon – 122 002
Haryana.
[Distributor : Metal-cutting machine tools]



NEW MEMBERS ENROLLED DURING 2011 - 2012

TRUMPF (INDIA) PRIVATE LIMITED

Raisoni Industrial Park
S.No. 276, Hissa No. 1
Village: Mann, Hinjewadi
Pune – 411 057
Maharashtra.
[Distributor : Metal-forming machine tools]

WELTECH EQUIPMENT & INFRASTRUCTURE LIMITED

Plot No.3
Giaspura Road
Near PSEB Sub Station
Dhandari Kalan
Ludhiana – 141 014
Punjab.
[Manufacturer : Accessories for machine tools]

WINDSOR MACHINES LIMITED

Plot No. 627
GIDC Chhatral
Kalol – 382 729
North Gujarat.
[Manufacturer : Plastic processing machines]

YG CUTTING TOOLS CORPORATION PRIVATE LIMITED

25/3, BSA Tech Park
Sitarampalya Hoodi Industrial Area
Bangalore – 560 048
Karnataka.
[Manufacturer : Cutting tools and tooling systems]

**Total Membership of IMTMA
as on 31 March 2012 : 444 members**





Indian Machine Tool Manufacturers' Association

Head Office

10th Mile, Tumkur Road, Madavara Post
Bangalore - 562 123, Karnataka (India).
T : +91-80-66246600. F : +91-80-66246661.
E : imtma@imtma.in

Regional Office (North)

Plot No. 249 F, Phase IV, Udyog Vihar
Sector - 18, Gurgaon - 122 015, Haryana (India).
T : +91-124-4014101 to 4104. F : +91-124-4014108.
E : imtma.ggn@imtma.in

Regional Office (West)

503 South Block, "Sacred World"
S. No. 75 / 2 / 2, Opp. Sacred Heart Town
Wanorie, Pune - 411 040, Maharashtra (India).
T : +91-20-40091501. T/F : +91-20-26852047.
E : imtma.pune@imtma.in

www.imtma.in