



Indian Machine Tool  
Manufacturers' Association

# ANNUAL REPORT

## 2016-2017



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# Executive Committee 2016 - 2017

## President

### P. G. Jadeja

Chairman & Managing Director  
Jyoti CNC Automation Limited

## Vice President

### P. Ramadas

Managing Director  
Ace Manufacturing Systems Limited

## Members

### Vernon Pontes

Director  
Alex Machine Tools Private Limited

### Pradeep Pradhan

CEO - Batliboi Machine Tool Group  
Batliboi Limited  
(Retired from Batliboi Limited in May 2017)

### Ravi Raghavan

Managing Director & CEO  
Bharat Fritz Werner Limited

### D. Srihari

Director  
Cadem Technologies Private Limited

### Sonali Kulkarni

President & CEO  
FANUC India Private Limited

### B. M. Shivashankar

Managing Director  
HMT Machine Tools Limited

### B. C. Rao

Managing Director  
Kennametal India Limited

### K. Soundhar Rajhan

President - Machine Tool,  
Foundry & ATC Divisions  
Lakshmi Machine Works Limited

### Rupesh J. Mehta

Chairman & Managing Director  
Macpower CNC Machines Private Limited

### Dr. P. Radhakrishnan

Advisor  
PSG Industrial Institute

### Rajendra S. Rajamane

Managing Director  
Rajamane Industries Private Limited

### Vijay Pratap Singh

Head – Motion Control  
Siemens Limited

### Rajesh G. Khatri

Executive Director & CEO  
TAL Manufacturing Solutions Limited  
(Moved to TATA Motors in April 2017)

### Indradev Babu

Managing Director  
UCAM Private Limited





# Executive Committee 2016 - 2017

## Co-opted Member

### Achal Nath

Executive Director  
Ashok Manufacturing Company Private Limited

## Past Presidents

### L. Krishnan

Managing Director  
TaeguTec India Private Limited

### Vikram Sirur

Executive Chairman  
Miven Machine Tools Limited

### M. Lokeswara Rao

Managing Director  
Lokesh Machines Limited

### N. K. Dhand

Chairman  
Micromatic Grinding Technologies Limited

### C. P. Rangachar

Managing Director  
Yuken India Limited

### V. S. Goindi

Chairman  
Parishudh Machines Private Limited

### Shrinivas G. Shirgurkar

Managing Director  
Ace Designers Limited

### C. R. Swaminathan

PSG Industrial Institutions\*

### Shailesh Sheth

Corporate Strategy Adviser  
Sheths'

### S. N. Mishra

Bharat Fritz Werner Limited\*

### Nirmal Bhogilal

Chairman  
Batliboi Limited

### R. Srinivasan

Widia India Limited\*

### Jamshyd N. Godrej

Chairman & Managing Director  
Godrej & Boyce Manufacturing Company Limited

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

## Invitees

### S. Jagtar Singh

President  
Association of Ludhiana Machine Tool Industries  
(S. Sukhdial Singh till May 2017)

### Aditya Ratnaparkhi

Executive Director  
Electronica Plastic Machines Limited

### Vivek Nigam

Business Head - Machine Tool Business Group  
ISGEC Heavy Engineering Limited

### Dinesh N. Khambhayata

President  
Machine Tools Manufacturers Association - Rajkot

### Raghava Badhya T. V.

President  
Makino India Private Limited

### T. K. Ramesh

Chief Executive Officer  
Micromatic Machine Tools Private Limited

### A. N. Chandramouli

Managing Director  
Starrag India Private Limited

## Secretary and Director General & CEO

V. Anbu

# Foreword



## Brighter Prospects on the Horizon

I feel privileged to present the Annual Report and Audited Statement of Accounts of Indian Machine Tool Manufacturers' Association (IMTMA) for the year 2016 - 2017. The Association continued to guide its member companies to prepare for the challenges and opportunities that lie ahead.

I am pleased to highlight, in this report, some of our activities during the last one year.

### Marching Forward with Renewed Confidence

The economy of India is the sixth-largest economy in the world measured by nominal GDP and third-largest by purchasing power parity (PPP). India is classified as a newly industrialized country, one of the G-20 major economies, and a developing economy with an average growth rate of approximately 7 per cent over the last two decades. The country is expected to continue to be the fastest growing major economy in the year ahead.

Manufacturing has been accorded great importance by the Government of India. The Government's 'Make in India' initiative has given a broad direction for manufacturers to invest in India, focus on infrastructure development and enhance growth.

The much talked about tax reform in the country – Goods and Services Tax (GST) came into effect from July 1. The new paradigm in India's cooperative federalism is expected to rein in marked improvement in tax compliance and facilitate ease of doing business. The applicability of the standard GST 18 per cent rate for machine tools may result in reduction in overall indirect tax.

The Automotive Mission Plan initiated by the Government of India has hit the right chord by ensuring growth for the auto components sector. It is pleasing to see that the auto components sector of India is on way to become the third largest sector by 2025. Auto component makers from India are well positioned to take advantage of the globalization of the sector as exports potential could reach \$40 billion by 2020.

Indian railways is coming up with trains for high speed corridors and this is likely to create demand for machine tools. Metro trains planned across various cities will also spur the demand for machine tools.

India's commitment to macro-economic stability and prudent fiscal management was reaffirmed with the reduction in income tax for micro, small and medium enterprises (MSMEs). The reduction in income tax from 30 per cent to 25 per cent and allowance in credit for minimum alternate tax to be carried forward for upto 15 years is a positive step towards development of the MSME sector and enhance their production capacities.

India is seeing an upward trajectory in terms of investments by global players in various industries. FDI reforms unveiled by the government last year set the ball rolling for steady inflow of investments. As per data released by the Department of Industrial Policy and Promotion, FDI inflows to India in the calendar year was recorded to be \$46.4 billion.

Considering these aspects, manufacturing is on the upward swing and going on the right path. Sustaining this growth rate will rebuild the confidence of investors in Indian economy.

### Machine Tools and Government Advocacy

Indian machine tool industry is reinventing itself through innovations to attune itself to the changing demands of its customers. The industry registered an impressive growth rate of 23 per cent during 2016-17. Domestic manufacturing caters to over 45 per cent of the country's requirements and the aim of the industry is to increase this considerably which will eventually reduce our dependence on imports. **India stands 8<sup>th</sup> in Consumption and 12<sup>th</sup> in Production** as per Gardner's World Machine Tool Output Survey 2017.

It gives me immense pleasure to inform you that the Association has rigorously worked with the Government of India as well as the state on various fronts in providing support for the growth of the machine tool industry.

The setting up of **Advanced Manufacturing Technology Development Centre** at the Indian Institute of Technology - Madras with support from the Department of Heavy Industry, Govt. of India, has given impetus to indigenous manufacturing. Indian companies have begun developing

# Foreword

products at this centre and making them available for commercial use. Some of the new products developed by Indian machine tool companies were showcased during IMTEX 2017 in January 2017.

Implementation of Tumakuru Machine Tool Park (TMTP) in Vasanthanarasapura near Tumkur jointly by the Government of India and the Government of Karnataka is expected to have a positive effect on India's machine tool industry in the long term.

The Government of India is drafting a new Industrial Policy which is expected to be finalized this year. The policy is likely to have provisions for creating global brands out of India, strengthening linkages between Indian and global SMEs and intensifying FDI, etc.

## Association Initiatives

### Technology & Training

More than **290 short-term as well as long-term training programmes** during the year 2016-17, and these efforts enabled IMTMA to record over **18,000 person-days of training** and support the Indian manufacturing industry in skill development and skill upgradation.

IMTMA through its training centres in Bengaluru, Pune and Gurugram has continued to inspire and train the industry workforce to prepare for the challenges and opportunities of working in the manufacturing industry. I feel proud to inform you that the participating industries recognize IMTMA as the institution that combines theory and practical aspects of training and makes engineers "industry ready". IMTMA is also part of the Capital Goods Sector Skill Council formed by Government of India.

### Mega Events

Our Association has taken up endeavours to keep up with the changing requirements of the industry. To champion the cause of productivity in metal working industries, IMTMA organized the Tenth **National Productivity Summit 2016** in Bengaluru. The summit showcased the best productivity practices in metal working and was an excellent platform for knowledge sharing.

Two other flagship events were also organized during the year. To explore new strategies and trends in metal working and to expose participants to a new range of value added machining solutions in metal cutting, IMTMA organized **International Seminar on Machining Technologies** coinciding with IMTEX 2017 & Tooltech 2017 in Bengaluru.

To address and understand the real-time benefits and applications of Smart Manufacturing, Internet of Things and Industry 4.0, the Association organized the second edition of **Symposium on Smart Manufacturing** at BIEC, Bengaluru.

Automation Buzz, an exhibition displaying a wide range of automation devices and systems, software and automation solutions was held concurrently with the Symposium.

### Trade Fairs

The year 2017 had a great start with the colossal success of **IMTEX 2017 and Tooltech 2017** bringing substantial business orders and enquiries. Business orders worth Rs. 1,670 Cr and enquiries worth Rs. 18,989 Cr were generated during the exhibition.

As a first, a '**Reverse International Buyer-Seller Meet**', a platform for Indian machine tool manufacturers to interact with international buyers was organized with support from EEPIC and Govt. of India. At IMTEX 2017 & Tooltech 2017, around 40 Academic institutions participated in **i2 Academia** Pavilion. '**CONNECT**', an awareness programme of young engineers was organized wherein around 600 students were given an opportunity to gain more knowledge on machine tools and manufacturing sector.

### Regional Expos

The long cherished desire of opening avenues for penetrating the far flung regional markets to enhance the manufacturing capabilities of various industry sectors was boosted with the launch of the **Delhi Machine Tool Expo 2015** in New Delhi and **Pune Machine Tool Expo 2016** in Pune. The exhibitions enabled the Association to reach out to the various regional manufacturers.

Going forward, IMTMA scheduled the second edition of the Delhi Machine Tool Expo 2017 at Pragati Maidan in New Delhi. METROLOGY Expo, an exhibition for testing instrument and metrology and WELDEXPO, an exhibition for welding, cutting and joining will be held concurrently.

### Publications

To further the competitiveness of the machine tool industry, the Association brought out two publications: Guide to Indian Machine Tools 2017 which gives a descriptive insight into the product capabilities of the Indian machine tool industry; and a Comprehensive Report on Indian Metal-Cutting Machine Tools which serves as a guide for trends in metal-cutting machine tool industry in India.

### BIEC - Celebrating a Decade of Excellence

*Bangalore International Exhibition Centre (BIEC) - a premier exhibition and conference facility in the country, completed 10 years of its establishment in January 2017* and the milestone was celebrated with a commemoration programme. As a homage to the visionary Naoroji Pirojsha Godrej, a short film was screened for the dignitaries. A Coffee Table Book showcasing the journey of BIEC from its humble beginnings was also released during the occasion. IMTMA, continuing

# Foreword

with its efforts of providing world-class exhibition facilities, added a new Exhibition Hall (Hall 4) measuring 17,500 sq.mts. to the existing BIEC infrastructure. With expansion of the facility, BIEC becomes a natural choice for leading exhibition organizers to showcase large industrial exhibitions in the country.

During the first 10 years from 2007 to 2017 more than 220 shows occupying over 1500 days were organized at BIEC.

## Future Thrust

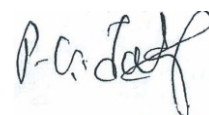
Indian machine tool industry is moving towards using new age technologies such as Industry 4.0, Internet of Things, 3D printing, etc. These are expected to take manufacturing to the next level and make the machine tool sector thoroughly competitive. Our research and development capabilities are evolving with prime focus on indigenous development of products. Technology tie-ups with global machine tool companies are also creating opportunities for Indian companies to develop their business in overseas market. I would like to reiterate that the Association will continue to project the machine tool industry as a key enabler of the 'Make in India' initiative and do its part in making the industry a global player.

## Adieu

I would like to record that the past two years have been challenging. Personally for me these two years were a great learning experience. These were made possible due to the proactive assistance of IMTMA's Executive Committee and membership, and enduring guidance and contribution of Past Presidents.

I specially extend my thanks to IMTMA Secretariat ably led by V. Anbu, for their unstinted support all the time. As I lay down the office of President at the forthcoming Annual General Meeting, I commit my whole-hearted support to my successor and to the new Executive Committee.

As a note of conclusion, I am sure that the deep commitment and earnest endeavour of the Association, its membership and the Executive Committee will lead the Association to greater achievements in the coming years.



**P. G. Jadeja**  
President



# 70<sup>th</sup> Annual General Meeting

**23 September 2016: Bangalore International Exhibition Centre, Bengaluru**

Indian Machine Tool Manufacturers' Association (IMTMA) held its 70th Annual General Meeting at Bangalore International Exhibition Centre in Bengaluru on 23 September 2016. At the Executive Committee meeting, following the AGM, new Executive Committee of IMTMA for the year 2016-2017 was formed.

Prior to the AGM, a presentation on GST (Goods and Services Tax) which threw light on some of the key aspects of GST and how it would shape India's manufacturing in future was made by Pricewaterhouse Coopers.



Delivering his annual address at the AGM, IMTMA President, Mr. P.G. Jadeja briefly spoke about the positive signs emerging in the Indian economy and the thrust given by the Government of India to manufacturing. Mr. Jadeja said that the machine tool industry is on the path of recovery and that the industry's market share has increased both in terms of revenue and percentage. He said that the various policy initiatives by the Government of India such as National Capital Goods Policy 2016, GST, 100% FDI in major sectors, new Defence Procurement Policy, etc. will enable manufacturing to grow to the next level.

Mr. Jadeja thanked the Members, Past Presidents, Executive Committee and the Secretariat of IMTMA for providing assistance, guidance and support in all major endeavours of the Association.

He then took up the statutory agenda and the special business of the Association which was unanimously approved by a voice vote. The 70th AGM concluded with a vote of thanks to the office-bearers of the Association by Mr. R. Srinivasan, Past President.





# World Machine Tool Scenario 2016

Global Production of machine tools during 2016 declined by 3.5 percent. Output by principle producing countries was USD \$ 78 billion. Among the major machine tool manufacturing countries larger gainers are India with 12.5 percent increase, Italy with 5.5 percent increase.

Top three machine tool producing countries are China followed by Germany and Japan. Output from top three countries account for about 61 percent of 2016 total world production.

China continues to be largest machine tool consuming country in the world which installed about USD 22.9 billion worth of machine tools. Based on Gardner's world machine tool consumption survey report, India ranks world 12th in production and 8th in consumption during 2016.

## Production of Machine Tools

Estimated production of Global Machine Tool amounted to USD 78. Billion during 2016 a decline of 3.5 % from revised USD 80.8 Billion during 2015. India now occupies 12th position in production compared to 13th position during 2015. Top five countries are China (29.4%), Germany (16.0%), Japan (15.6%), US (7.6%), & Italy (7.0%). India accounts for 1.0 percent of global machine tool production during 2016. India's production has increased by 12.5 percent in USD terms during 2016.

Global Machine Tool Production				
SI NO	Country	Value in USD Mn		
		2015	2016	Growth rate (%)
1	China	22,100.0	22,900.0	3.6%
2	Germany	12,442.0	12,450.4	0.1%
3	Japan	13,455.5	12,174.5	-9.5%
4	USA	5,910.6	5,912.6	0.0%
5	Italy	5,205.3	5,489.2	5.5%
6	South Korea	5,400.0	4,317.0	-20.1%
7	Taiwan	4,097.5	3,730.0	-9.0%
8	Switzerland	3,244.8	2,988.1	-7.9%
9	Spain	1,043.5	1,039.2	-0.4%
10	Austria	945.8	905.3	-4.3%
11	France	742.7	797.9	7.4%
12	India	692.7	779.4	12.5%
13	Brazil	845.8	680.6	-19.5%
14	Canada	730.3	673.5	-7.8%
15	Czech Republic	696.0	638.6	-8.3%
16	Turkey	661.6	629.4	-4.9%
17	UK	725.6	627.7	-13.5%
18	Netherlands	387.4	386.2	-0.3%
19	Belgium	263.1	244.6	-7.0%
20	Sweden	186.5	185.9	-0.3%
21	Finland	148.8	154.9	4.2%

# World Machine Tool Scenario 2016

Global Machine Tool Production				
SI NO	Country	Value in USD Mn		
		2015	2016	Growth rate (%)
22	Mexico	137.1	113.6	-17.2%
23	Portugal	107.7	107.3	-0.3%
24	Denmark	81.0	80.8	-0.3%
25	Argentina	96.7	0.0	
26	Russia	485.0	0.0	
	<b>Total</b>	<b>80,833.0</b>	<b>78,006.8</b>	<b>-3.5%</b>

Note: Provisional data from Gardner Publications Inc. Report yet to be published.

## Global Machine Tool Consumption

Estimated consumption of Global Machine Tool amounted to USD 70.4 Billion during 2016 a decline of 4.6 % from revised USD 74.2 Billion during 2015. India's now occupies 8th position in consumption of machine tools compared to 12th position during 2015.

Global Machine Tool Consumption				
SI NO	Country	Value in USD Mn		
		2015	2016	Growth rate (%)
1	China	27,500.0	27,500.0	0.0%
2	USA	8,867.7	8,678.9	-2.1%
3	Germany	6,430.8	6,817.3	6.0%
4	Japan	5,770.2	6,184.9	7.2%
5	South Korea	4,465.0	3,511.0	-21.4%
6	Italy	2,978.4	3,331.2	11.8%
7	Mexico	2,454.8	2,343.6	-4.5%
<b>8</b>	<b>India</b>	<b>1,477.4</b>	<b>1,663.9</b>	<b>12.6%</b>
9	Taiwan	1,633.4	1,555.3	-4.8%
10	France	1,100.1	1,211.8	10.2%
11	Turkey	1,216.7	1,201.1	-1.3%
12	Canada	1,379.8	1,171.0	-15.1%
13	Switzerland	1,202.2	1,051.4	-12.5%
14	Brazil	1,309.8	850.3	-35.1%
15	UK	850.8	728.9	-14.3%
16	Spain	649.4	663.3	2.1%
17	Austria	627.2	592.1	-5.6%
18	Czech Republic	609.4	463.7	-23.9%

# World Machine Tool Scenario 2016

Global Machine Tool Consumption				
SI NO	Country	Value in USD Mn		
		2015	2016	Growth rate (%)
19	Netherlands	425.2	423.9	-0.3%
20	Belgium	179.8	200.3	11.4%
21	Sweden	218.7	198.1	-9.4%
22	Portugal	210.9	191.5	-9.2%
23	Finland	134.3	145.0	7.9%
24	Denmark	96.6	96.3	-0.3%
25	Argentina	241.8	0.0	
26	Russia	2,177.0	0.0	
	<b>Total</b>	<b>74,207.5</b>	<b>70,774.7</b>	<b>-4.6%</b>

Note: Provisional data from Gardner Publications Inc. Report yet to be published.

# Trends in Indian Machine Tool Industry

## Production of Metal Working Machine Tools

All Values in ₹Crores

Machine Tool Segment	2014-15		2015-16		Value Growth (%)	2016-17		Value Growth (%)
	Qty	Value	Qty	Value		Qty	Value	
<b>Metal Forming</b>	<b>1010</b>	<b>462</b>	<b>1149</b>	<b>521</b>	<b>13%</b>	<b>1260</b>	<b>593</b>	<b>14%</b>
CNC	371	126	438	126	0%	516	137	9%
Conventional	639	336	711	395	18%	744	456	15%
<b>Metal Cutting</b>	<b>14237</b>	<b>3769</b>	<b>15113</b>	<b>4206</b>	<b>12%</b>	<b>20097</b>	<b>5210</b>	<b>24%</b>
CNC	12280	3296	13335	3755	14%	19266	4854	29%
Conventional	1957	473	1778	451	-5%	1454	356	-21%
<b>Total Metal Working</b>	<b>15247</b>	<b>4231</b>	<b>16262</b>	<b>4727</b>	<b>12%</b>	<b>21980</b>	<b>5803</b>	<b>23%</b>
CNC	12651	3422	13773	3881	13%	19782	4991	29%
Conventional	2596	809	2489	846	5%	2198	812	-4%

Source: IMTMA

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

## Export of Metal Working Machine Tools

All Values in ₹Crores

Machine Tool Segment	2014-15		2015-16		Value Growth (%)	2016-17		Value Growth (%)
	Qty	Value	Qty	Value		Qty	Value	
<b>Metal Forming</b>	<b>21</b>	<b>41</b>	<b>34</b>	<b>46</b>	<b>12%</b>	<b>19</b>	<b>92</b>	<b>100%</b>
CNC	-	-	4	1	-	7	5	400%
Conventional	21	41	30	45	10%	12	87	93%
<b>Metal Cutting</b>	<b>732</b>	<b>239</b>	<b>684</b>	<b>250</b>	<b>5%</b>	<b>775</b>	<b>268</b>	<b>7%</b>
CNC	662	219	649	244	11%	704	214	-12%
Conventional	70	20	35	6	-70%	119	54	800%
<b>Total Metal Working</b>	<b>753</b>	<b>280</b>	<b>718</b>	<b>296</b>	<b>6%</b>	<b>842</b>	<b>360</b>	<b>22%</b>
CNC	662	219	653	245	12%	711	219	-11%
Conventional	91	61	65	51	-16%	131	141	176%

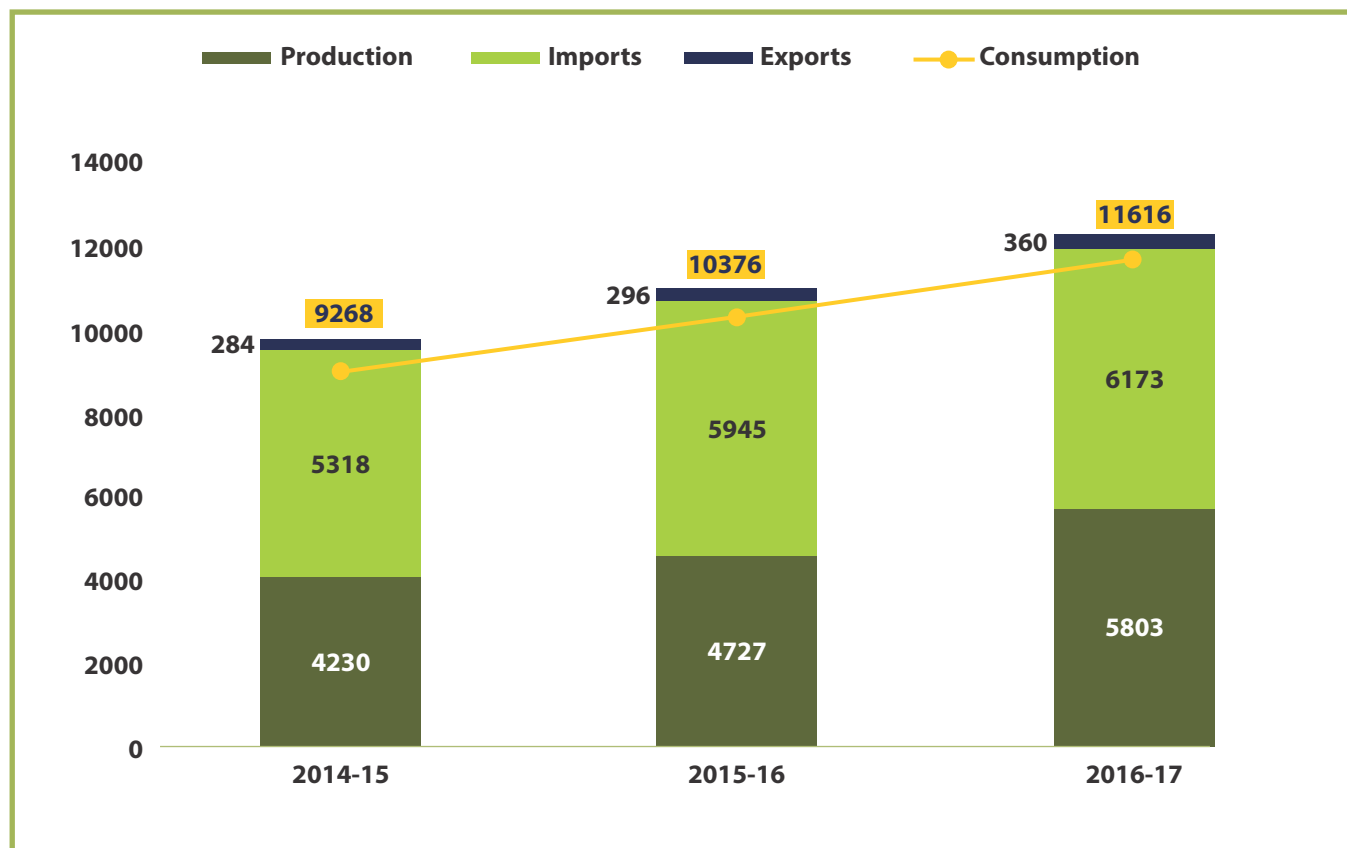
Source: IMTMA

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

# Trends in Indian Machine Tool Industry

## Indian Machine Tool Industry 2014-15 to 2016-17

All Values in ₹ Crores



Source: IMTMA



# Calendar of Events - 2016

July 2016	
4 - 30	Finishing School in Production Engineering : Enhancing Productivity in Machining - Bengaluru
7 - 8	Applied Metallurgy for Engineering Industry - Pune
8	Cleaning of Machined Components - Gurugram
11 - 12	Productive Utilization of CNC Grinding Machines - Bengaluru
11 - 13	Sheet Metal Dies - Tryout and Proving - Pune
14 - 15	Design of Experiments - An approach to Robust Product and Process Quality with real life examples - Bengaluru
14	Modern Automotive needs and Latest trends in Forging Technology - Chennai
15	Energy Conservation / Energy Saving in Manufacturing - Pune
18 - 19	Business Excellence through Cost of Quality & Basics of Six Sigma Methodology - Pune
19	Reverse Engineering - Latest trends and applications - Bengaluru
20 - 22	Effective Sales and Marketing of Machine Tools and Capital Goods - Pune
21 - 22	Advanced concepts of GD&T - Bengaluru
21 - 22	Predictive Maintenance of Industrial Machines - Bengaluru
25 - 30	Training on Hydraulic System Design for Machineries - Bengaluru
25 - 27	Advanced Programming for CNC Machining centres - FANUC Controller - Pune
26	Latest Trends and Applications in Fine Blanking Technology - Pune
28 - 29	Latest trends in Laser, Plasma & Waterjet Machining - Bengaluru
28 - 29	Challenges and Solutions in Machining Aerospace Materials - Bengaluru

August 2016	
1 Aug - 24 Sep	Machine Tool Design - Mechanical - Bengaluru
1 - 31	Finishing School in Production Engineering - Pune
5	Improving Effectiveness of Tool Room Engineer - Pune
9 - 10	Latest trends in Die & Mould Manufacturing - Bengaluru
9 - 10	Automation Project Implementation - Pune
11 - 12	Additive Manufacturing / 3D Printing Technologies - Bengaluru
11 - 12	Understanding & Implementation of Risk Assessment through FMEA - Gurugram
11 - 12	Advanced course in Sheet Metal Forming Technology - Pune
16 - 20	Hands-on training in Co-ordinate Measuring Machines (CMMs) - Bengaluru
18 - 19	Enabling Industrial Automation - Role of PLC, VFD and Servo - Bengaluru
19	Training Programme on Selection, Assembly and Trouble shooting of Linear Motion Guide ways and Ball Screws for Industrial Machinery - Pune
22 Aug - 3 Sep	Hands-on Training in Maintenance & Assembly of Machine Tools - Bengaluru
22	Gear Metrology and Measurement Methods - Pune
23 - 24	Design for Manufacturing and Assembly - Bengaluru

# Calendar of Events - 2016

August 2016	
24 - 26	Selection of Tools and cutting parameters for CNC Machining - Bengaluru
25 - 26	Effective Maintenance and Trouble Shooting of Presses - Bengaluru
26 - 27	Noise and Vibration Control of Industrial Machines - Pune
29 Aug - 26 Sep	Finishing School in Production Engineering- Enhancing Productivity in Machining - Bengaluru
30 - 31	Spindle Maintenance for Metal Cutting & Industrial Machinery - Bengaluru
30 - 31	Product Validation through FEA/FEM - Gurugram
30 - 31	Assembly, Welding and Inspection Fixtures - Pune

September 2016	
2	Idle Time Reduction in Metalworking through Quick changeover techniques - Pune
7 - 8	Strategies for successful Design and Processing of Plastic Parts - Pune
9	Modern Automotive needs and Latest trends in Forging Technology - Gurugram
13 - 14	Machining Dynamics : Transforming science into technologies for improved productivity - Bengaluru
19 - 23	Basics of Programming and Operation of CNC Machining Centres - Pune
20 - 21	Cost of Quality & how to reduce COPQ - Bengaluru
22 - 23	Defects Analysis of Paint & Powder Coating Applications - Gurugram
22 - 23	Effective Maintenance towards Zero down time - Electrical & Electronic Aspects of CNC Machines - Bengaluru
22 - 23	Selection and Application of Metal-forming Presses - Pune
26 Sep - 22 Oct	Machine Tool Design – Electrical -Bengaluru
26 Sep - 1 Oct	Design of Spindle - Specialization (Turning / Milling / Grinding) - Pune
27 - 28	Design of Workholding & Fixturing - Coimbatore
27 - 28	Fundamentals of Product Quality Planning (APQP) & Implementation of the Production Part Approval Process (PPAP) - Pune
28 - 29	Sustaining Quality through Non Destructive Testing - Bengaluru
29 Sep - 2 Oct	Pune Machine Tool Expo 2016 - Pune
30	Burr Management in Machining - Pune

# Calendar of Events - 2016

October 2016	
4 - 5	ASME Training on Geometric Dimensioning and Tolerancing in Design thru Manufacturing (for GDTP-Senior Level) - Bengaluru
6 - 7	Challenges and solutions in achieving geometrical accuracies in machining - Bengaluru
6	Surface Finish Measurement & improvement - Pune
13 - 14	Design of Gauges - Pune
14 - 15	Cost reduction and Quality enhancement through VA / VE - Gurugram
17 - 22	Training on Hydraulic System Design for Machineries - Gurugram
17 - 22	Design of Fixture – Specialization (Machining / Welding / Assembly and Inspection Fixtures) - Bengaluru
17 - 21	Hands-on Training in Programming & Operation of CNC Turning Centres - Pune
18	ISO System of Limits, Fits & Tolerances for Engineering Parts - Pune
18 - 19	Practical approach to Gears and Gear Design - Bengaluru
19 - 20	Geometric Dimensioning and Tolerancing (GD&T) in Design through Manufacturing - Pune
20 - 21	Getting the best out of Co-ordinate Measuring Machines (CMMs) - Gurugram
21 - 22	Fundamentals and applications of Cold forging - Bengaluru
21 - 22	Heat Treatment Processes in Metal Working - Pune
24 - 26	Robots Operation and Programming - Bengaluru
25 - 26	Manufacturing Excellence thro SPC and Problem Solving Tools - Bengaluru

November 2016	
7 Nov - 3 Dec	Finishing School in Production Engineering: Enhancing Productivity in Machining - Pune
7 - 19	Hands-on training in Industrial Automation - Bengaluru
8 - 9	Understanding & Implementation of Risk Assessment through FMEA - Pune
9	SUPER FINISHING PROCESS - Honing and its applications - Bengaluru
9 - 10	Effective Maintenance towards Zero down time - Electrical & Electronic Aspects of CNC Machines - Bengaluru
11	CE Marking - Compliance requirements for export markets - Bengaluru
12	Gear Metrology and Measurement Methods - Gurugram
14 Nov - 7 Jan	Machine Tool Design – Mechanical - Bengaluru
15	Cleaning of Machined Components - Bengaluru
15 - 17	Effective Sales and Marketing of Machine Tools and Accessories - Bengaluru
15 - 16	Spindle Maintenance for Metal Cutting & Industrial Machinery - Pune
17 - 18	Visual Factory / Visual Management : Paving Way for Lean, TQM and TPM Implementation - Pune

# Calendar of Events - 2016

November 2016	
21 - 24	Advanced Programming for CNC Machining Centres - Bengaluru
22	How to Make Better Castings and Run a Foundry Better - Bengaluru
24 - 26	National Productivity Summit 2016 - Bengaluru
24 - 26	Maintenance and Trouble Shooting of Hydraulics and Pneumatics Systems - Pune
28 Nov - 24 Dec	Finishing School in Production Engineering: Enhancing Productivity in Machining - Bengaluru
28 - 30	Tolerance Stack-Up Analysis - Bengaluru
28 - 29	Enabling Industrial Automation - Role of PLC, VFD and Servo - Pune
December 2016	
1 - 2	World Class Manufacturing Practices for Achieving Zero Defects - Bengaluru
2 - 3	Heat Treatment Processes in Metal Working - Gurugram
5 - 7	ASME Training on Geometric Dimensioning and Tolerancing in Design thru Manufacturing (for GDTP-Technologist Level) - Bengaluru
5 - 7	Sheet Metal Dies - Tryout and Proving - Pune
8 - 9	ASME Training on Geometric Dimensioning and Tolerancing in Design thru Manufacturing (for GDTP-Senior Level) - Bengaluru
8 - 9	Cost reduction and Quality enhancement through VA / VE - Gurugram
9 - 10	Effective Maintenance and Trouble Shooting of Presses - Pune
12	Modern Automotive needs and Latest trends in Forging Technology - Bengaluru
13 - 14	Forging Die Design - A Practical approach (Hot Forging) - Pune
13 - 14	Advances in Machine Tool Testing & Calibration - Gurugram
14 - 15	Design for Target Cost through Value Engineering - Bengaluru
16	Challenges and Solutions in Thread Cutting Operations - Pune
19 - 20	Machining Dynamics-Transforming Science into Capital - Bengaluru
19 - 20	Towards Zero Defects in Welding Applications - Bengaluru
19 - 21	Gear Manufacturing Processes - Pune
19 - 23	Hands-on training in Programming and Operation of CNC Machining Centres - Pune
22	Technology Trends at Euroblech 2016 - Pune
26 - 30	Hands-on training in Programming and Operation of CNC Machining Centres - Bengaluru
28	Management of cutting fluids and Filtration in Engineering industries - Pune

# Calendar of Events - 2017

## January 2017

3 - 13	Evening course – Hands on training in Programming and Operation of CNC Machining Centres
9 - 21	Hands-on Training Programme on Industrial Automation & Controls - Bengaluru
10 - 11	Spindle Maintenance for Metal Cutting & Industrial Machinery - Pune
10 - 12	Structured Innovation (Product/Process) TRIZ Methodology - Bengaluru
10 - 11	Advanced course in Sheet Metal Forming Technology - Bengaluru
10 - 11	Practical approach to Gears and Gear Design - Spur and Helical Gears - Gurugram
12 - 13	Design of Workholding & Fixturing - Pune
16 - 18	Gear Manufacturing Processes - Pune
16 - 20	Hands-on Training in Programming & Operation of CNC Turning Centres - Pune
16 - 20	Hands-on training in Co-ordinate Measuring Machines (CMMs) - Bengaluru
16 Jan - 11 Feb	Finishing School in Production Engineering: Enhancing Productivity in Machining - Bengaluru
17 - 18	Understanding & Implementation of Risk Assessment through FMEA - Gurugram
17 - 18	Improving Process Capability - Pune
19 - 20	Defects Analysis of Paint & Powder Coating Applications - Pune
25	International Seminar on Machining Technologies - Bengaluru
26 Jan - 01 Feb	IMTEX 2017 & Tooltech 2017 - Bengaluru
30 Jan - 25 Feb	Finishing School in Production Engineering: Enhancing Productivity in Machining - Pune

## February 2017

6 Feb - 4 Mar	Machine Tool Design - Electrical - Bengaluru
9 - 10	Effective Maintenance and Trouble Shooting of Presses - Gurugram
9 - 10	IDR Approach to trouble shoot Component Defects in a Press Shop - Chennai
10 - 11	Manufacturing Process Optimization using variable search Methodology - Pune
13 - 18	Design of Fixture – Specialization - Gurugram
13 - 14	Calibration of Dimensional Measuring Instruments & Evaluation of Uncertainty - Bengaluru
13 - 14	Manufacturing Excellence thro SPC and Problem Solving Tools - Pune
24 - 25	Symposium on Smart Manufacturing - Bengaluru

## March 2017

6 - 18	Hands on training – Certified Quality Engineer - Bengaluru
6 - 7	Towards Zero Defects in Welding Applications - Bengaluru
7 - 8	Getting the best out of Co-ordinate Measuring Machines (CMMs) - Pune
9 - 10	Geometric Dimensioning and Tolerancing (GD&T) in Design through Manufacturing - Bengaluru



# Calendar of Events - 2017

## April 2017

3 Apr - 7 May	Machine Tool Design – Mechanical - Bengaluru
10 - 13	Advanced Programming for CNC Machining centres - Bengaluru
11 - 12	Design and processing of sheet metal parts - Bengaluru
13	Cleaning of Machined Components - Pune
18	Training Programme on Selection, Assembly and Trouble shooting of Linear Motion Guide ways and Ball Screws for Industrial Machinery - Bengaluru
18 - 19	Effective Maintenance of CNC Machines - Mechanical Aspects - Pune
20 - 21	Geometric Dimensioning and Tolerancing in Design through Manufacturing - Pune
24 Apr - 20 May	Finishing School in Production Engineering: Enhancing Productivity in Machining - Bengaluru
24 - 29	Design of Gearbox– Industrial Machinery - Gurugram
25 - 26	Productive Utilization of CNC Grinding Machines - Bengaluru
25 - 26	Automation Project Implementation - Key Driver to Smart Manufacturing - Gurugram
25	Interesting Applications of laser in manufacturing -Cutting, Welding, Cladding and Hardening - Pune
27	Gear Metrology and Measurement Methods - Bengaluru
27	Super Finishing Process - Honing and its Applications - Pune
27	CE Marking - Compliance requirements - Pune
28 - 29	Noise and Vibration Control of Industrial Machines - Gurugram

## May 2017

4 - 5	Manufacturing Excellence through SPC and Problem Solving Tools - Pune
9 - 10	Geometric Dimensioning and Tolerancing (GD&T) in Design through Manufacturing - Pune
11 - 12	Design for Manufacturing and Assembly - Bengaluru
11 - 12	Fundamentals of Cold Forging & Its Application - Pune
15 - 19	Basics of Programming and Operation of CNC Machining Centres - Pune
16 - 17	Spindle Maintenance for Metal Cutting & Industrial Machinery - Gurugram
16 - 18	Maintenance and Trouble Shooting of Hydraulic and Pneumatic Systems - Bengaluru
17	Surface Finish Measurement & Improvement - Bengaluru
18 - 19	World Class Manufacturing Practices for Achieving Zero Defects - Pune
22 - 27	Training on Hydraulic System Design for Machineries - Pune
23 - 24	Heat Treatment Processes in Metal Working - Pune
23 - 24	Defects Analysis of Paint & Powder Coating Applications - Bengaluru
24 - 26	Robots Operation and Programming - Bengaluru
25 - 26	Productive CNC Machining - More for Less - Pune

# Calendar of Events - 2017

June 2017	
14	Energy Conservation / Energy Saving in Manufacturing - Pune
15 - 16	Fundamentals of Product Quality Planning (APQP) & Implementation of the Production Part Approval Process (PPAP) - Pune
19 - 20	Geometric Dimensioning and Tolerancing (GD&T) in Design through Manufacturing - Bengaluru
20 - 21	Improving CNC part quality including accuracy of CNC Machines - Pune
21	Cleaning of Machined Components - Gurugram
21 - 23	Tolerance Stack-Up Analysis - Bengaluru
22 - 23	Advanced Technologies in Sheet Metal Forming - Pune
23	Modern Automotive needs and Latest trends in Forging Technology - Gurugram
27 June - 22 July	Machine Tool Design – Electrical - Bengaluru
28 - 30	Effective Maintenance towards Zero down time - Electrical & Electronic Aspects of CNC Machines - Bengaluru
28 - 29	Practical approach to Gears and Gear Design - Spur and Helical Gears - Pune

# Association Initiatives

## AeroDef Group



IMTMA has formed an “Aerospace and Defence Group” comprising members having potential to cater to the aerospace as well as aerospace component and defence industries. IMTMA had an interaction with Mr. Baba Kalyani, Chairman, CII, National Committee for Defence, and Chairman & Managing Director, Bharat Forge Limited. IMTMA organized technology missions to various institutions in UK, Germany and Spain from 26 June to 5 July 2016.

## Aero India 2017



IMTMA participated in the eleventh edition of the “Aero India International Show”. The show was organized by the Defence Exhibition Organisation, Ministry of Defence, Government of India in collaboration with Indian Air Force, Defence Research and Development Organisation and the Department of Space, Government of India. It was held from 14 to 18 February 2017 in Bengaluru.

IMTMA was the only industry body participating as an exhibitor at Aero India 2017 catching the attention of several industry players in aerospace and defence sectors as also amongst policy makers. IMTMA participated under the Aero-Defence Group banner with six member companies. IMTMA representatives visited around 35 aerospace component manufacturers and briefed them about the Aero Defence Group besides various other Association initiatives.

## Visit to AEQUS



IMTMA Aero Def Group met with AEQUS (formerly known as Quest Global) representatives in Belgaum. During the meeting it came to notice that AEQUS which procured 21 machines during last year required around 30 to 35 machines every year. Timely delivery is an important requirement for parts in the aerospace industry. Accuracy level deterioration over period, is not acceptable. This seems to be a concern with Indian machines. Hard material machining poses a great challenge in terms of machine life and part accuracy. There were some other observations such as soft machining need high speeds, machine monitoring feature required to reduce operator dependency, etc.

## Visit to CIM Tools

IMTMA Aero Def Group visited CIM Tools on 19 January 2017 in Bengaluru. CIM Tools and members of the Aero Def Group discussed about the application support from Indian machine tool builders. CIM Tools were looking for 5 axes machining centres in future. During the meeting it was observed that overseas machines were preferred for the tolerance below 0.010mm. Indian machines are fine for tolerances greater than 0.0101mm. Indian machines lack in consistently delivering accurate components. It was also observed that Indian machine tool companies do not have expertized support in process / application engineering and were hence unable to deliver short cycle times for high productivity.

# Association Initiatives

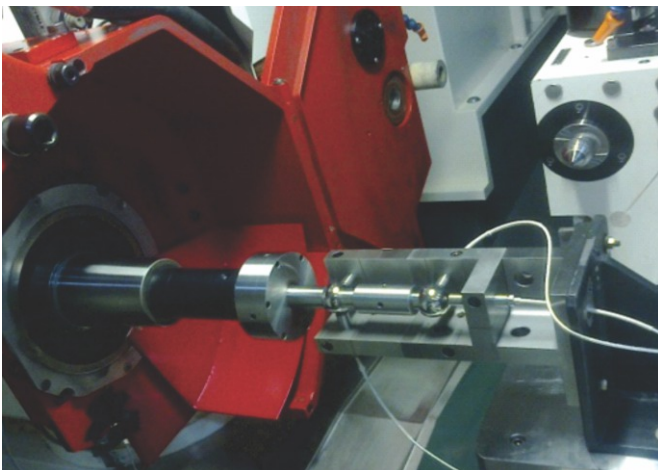
## 'Vision 2020' Strategic Actions:

### Workshop on R&D Policy & Structural Perspectives of the Indian Machine Tool Industry



IMTMA's Vision for the industry includes a long-term strategy which would give a cohesive direction for enabling growth and competitiveness of the Indian machine tool industry. Strategic actions on which the industry needs to focus to achieve results are to be identified. To delve deeper into this IMTMA organized a two-day workshop on 28 - 29 April 2016 in Pune. The two-day workshop had a thought provoking presentation about a Comprehensive Study and Report on R&D Policies and Practices in the Indian machine tool industry. Dr. K. M. Rajan, Director, Armament Research & Development Establishment Defence Research & Development Organisation gave a talk on "Role of R&D in Manufacturing Eco-System" in his inaugural address. Dr. Y. S. Rajan, Professor, Indian Space Research Organization gave a discourse on "R&D and Innovation Linkages to Business and Markets".

## Advanced Machine Tool Testing Facility



The Advanced Machine Tool Testing Facility (AMTTF) was a joint project of the machine tool industry and the Department of Industrial Policy and Promotion, Govt. of India. The objective was to establish a state-of-the-art machine tool testing facility at the Central Manufacturing Technology Institute (CMTI), Bangalore. AMTTF has carried out performance bench marking study of Indian machines as part of joint initiative by IMTMA and ACMA, and the study report indicated that the reliability of Indian machines performance is less than 1% of total working time, and was accepted by ACMA. The report recommended few action points (best electrical practices followed in foreign machines, documentation aspects supplied with the machines, acceptance criteria and testing of subsystems like ATC, Turret, Guideway Cover, and Chip Conveyor).

## Advanced Manufacturing Technology Development Centre (AMTDC)

The Advanced Manufacturing Technology Development Centre (AMTDC) has been set up at the Indian Institute of Technology – Madras (IIT-Madras) to engage in world-class R&D in machine tools and production technology for enhancing the competitiveness of capital goods sectors, under the support Scheme for creation of Centres of Excellence by the Department of Heavy Industry, Government of India. IMTMA is a promoter member. Eleven projects with total outlay of Rs. 56 crores are under implementation. AMTDC is being set up in new premises in the Science Park at IIT-Madras, Chennai.



# IMTEX 2017 & Tooltech 2017



18<sup>th</sup> Indian Metal-Cutting Machine Tool Exhibition with International participation



19<sup>th</sup> International Exhibition of Cutting Tools, Tooling Systems, Machine Tool Accessories, Metrology & CAD / CAM

## 26 January - 1 February 2017: Bangalore International Exhibition Centre (BIEC), Bengaluru



IMTMA's flagship event and South East Asia's largest exhibition on metal cutting 'IMTEX 2017 & Tooltech 2017' was held from 26 January to 1 February 2017 at the Bangalore International Exhibition Centre (BIEC) in Bengaluru.

The exhibition was inaugurated on 26 January 2017 by Shri Siddaramaiah, Hon'ble Chief Minister of Karnataka, Mr. Girish Shankar, Secretary (HI), Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises, Government of India, Mr. D.V. Prasad, I.A.S., Additional Chief Secretary, Commerce & Industries Department, Government of Karnataka, and Dr. Naushad Forbes, President, Confederation of Indian Industry (CII). Mr. Jamshyd N. Godrej, Chairman - Exhibitions, IMTMA, Mr. P.G. Jadeja, President, IMTMA, Mr. P. Ramadas, Vice President, IMTMA, and Mr. V. Anbu, Director General, IMTMA also presided over the inauguration.

### The show at a glance

The exhibition catered to 1072 exhibitors spread over 6 halls covering a gross exhibit space of around 66,000 square metres. The exhibition featured 601 Indian exhibitors and 471 foreign exhibitors. The participation came from 23 countries, including 8 group participations from China, Czech Republic, Germany, Italy, Japan, Spain, Taiwan and USA. The show attracted a footfall of over 75,000 visitors.

Many decision makers and business heads from across the spectrum of Indian metalworking industry participated in the exhibition. IMTEX 2017 and Tooltech 2017 recorded business orders worth Rs. 1,670 Cr and generated a high potential of business enquiries to the tune of Rs. 18,989 Cr.



International delegations from USA, Belgium, Japan, South Korea, UK, Taiwan, Italy, and Germany visited the exhibition. AMT (USA), CECIMO (Belgium), JMTBA (Japan), KOMMA (South Korea), MTA (United Kingdom), TAMI (Taiwan), and UCIMU (Italy) were part of the 7 days exhibition. Key domestic delegations from Automotive Component Manufacturers' Association, Tool & Gauge Manufacturers Association and Tractors and Farm Equipment Limited were also present.



# IMTEX 2017 & Tooltech 2017

## Key Events

### International Buyer-Seller Meet



An International Buyer-Seller Meet was organized during IMTEX 2017 & Tooltech 2017. Fifty-seven delegates from 19 countries were part of the delegation. The Buyer-Seller Meet was supported by Engineering Export Promotion Council of India.



### Jagruti

'Jagruti', a programme to familiarize engineering students with the machine tool industry and the technological happenings in this industry segment was also organized. Thirty-one students from 15 institutions participated in this initiative.



Over 600 students participated in 'Connect', an awareness programme for imparting knowledge on the machine tool industry for young engineers. Students availed this opportunity to gain more knowledge on machine tool and manufacturing sector and to pursue their career in these industries.

### i2 Academia Pavilion



Institutions from 21 cities were part of the i2 Pavilion (Academia Pavilion). Forty institutions had R&D displays at the Academia Pavilion. Thirteen institutions made presentations to the industry as part of the IMTMA Industry Institution Collaborative initiative.



IMTMA-Premier Outstanding Entrepreneur Award in memory of Vinod Doshi was conferred on Mr. Milind Kelkar and Mrs. Mohini Kelkar, from Grind Master, for their contributions to the industry.



As part of the inauguration ceremony, IMTMA released new publications: IMTMA Directory of Members 2017, Guide to Indian Machine Tools 2017, Comprehensive Report on Indian metal cutting Machine Tools and IMTEX 2017 Exhibition Catalogue.

# Pune Machine Tool Expo 2016



**29 September - 2 October 2016**  
Auto Cluster Exhibition Centre, Pune



Indian Machine Tool Manufacturers' Association (IMTMA) organized the first ever Pune Machine Tool Expo (PMTX 2016) from 29 September to 2 October 2016 at Auto Cluster in Pune. The show unveiled the latest manufacturing technologies and solutions that would enable OEMs and small and medium enterprises to leverage and enhance their manufacturing capabilities.

Pune Machine Tool Expo attracted a footfall of over 7000 visitors as well as 62 business delegations.

PMTX 2016 was a significant event for the Western region including various original equipment manufacturers (OEMs) and small and medium enterprises (SMEs) spread across the states of Maharashtra and Gujarat.





# Major Events and Activities



## National Productivity Summit 2016

24 - 26 November 2016: Bengaluru

Indian Machine Tool Manufacturers' Association (IMTMA) organized the National Productivity Summit 2016 at Bangalore International Exhibition Centre (BIEC) in Bengaluru from 24 - 26 November 2016.

The theme of the summit was "Showcasing Competitiveness in Manufacturing". The summit was inaugurated by Mr. B. Muthuraman, Former Vice Chairman, Tata Steel and Mr. L. Ganesh, Chairman, Rane Group.

The summit featured two inspiring keynote addresses by Dr. Andreas Wolf, Senior Executive Vice President, Bosch Ltd on 'Productivity, Quality and Cost - Three nodes of Manufacturing Competitiveness Triangle' and by Mr. Anoop Chaturvedi, Senior Advisor - Production Engineering, Maruti Suzuki India on 'Innovation for Manufacturing Excellence - Maruti Suzuki's Success Story'. The keynote addresses gave participants a holistic insight into the best practices in enhancing productivity.

Tenth in the series, the National Productivity Summit 2016 showcased best practices in manufacturing through live case study presentations, plant visits, and success stories. The plant visits were arranged to enable a first-hand view of demonstrations that focused on productivity improvements through cost effective automation, TPM practices on shop floor, lead time reduction, productivity gains through quality improvements, and so on. Toyota Kirloskar Auto Parts, Toyota Kirloskar Motor, Volvo Buses, and Honda Motorcycles & Scooters India were the four factories visited by the delegates.

The summit also featured presentations on productivity improvement projects from various companies such as Mahindra & Mahindra, Super Auto Forge, TTK Prestige, Brakes India, VE Commercial Vehicles and Toyota Kirloskar Auto Parts. The summit also featured two success stories. Anand Group presented its success story, 'Change Management: Innovation led transformation on Productivity Excellence - The Anand Group's Journey'. ACE Designer presented its success story, 'Operational Excellence: Scaling up to meet market demand - ACE Designer's saga'.

The case study presenters who have excelled in achieving superior performance through sustained productivity improvements were evaluated by the eminent jury and crowned 'Productivity Champions' at the IMTMA-ACE Micromatic Productivity Championship Awards 2016, which gave away cash prizes worth ₹10 lakhs.

The first prize was awarded to Toyota Kirloskar Auto Parts for its case study presentation on 'Productivity Improvement in Transmission Assembly line through Jishuken and Low Cost Automation'. The second prize was awarded to Mahindra & Mahindra for their case study presentation on 'Journey towards Excellence through Technical Upgradation'. The third prize was bagged by VE Commercial Vehicles for its presentation on 'Elimination of non-value added Cleaning Operations in Cylinder Block and Cylinder Head Manufacturing'.

The summit witnessed a turnout of over 250 delegates from wide cross section of the manufacturing industry.

# Major Events and Activities



## International Seminar on Machining Technologies

25 January 2017: Bengaluru

Indian Machine Tool Manufacturers' Association (IMTMA) organized an International Seminar on Machining Technologies in conjunction with IMTEX 2017 & Tooltech 2017 exhibition on 25 January 2017 in Bengaluru.

The theme of the seminar was "Powering Manufacturing Growth and Competitiveness". The seminar had concurrent sessions on Machine Tools & Machining, Emerging Technologies, Tooling & Cutting Fluids, Surface Finishing, and Control Systems & Metrology.

IMTMA has been continuously evaluating the status of the metal-cutting in India by organizing international seminars to bring to the fore emerging trends in machining technologies and examining its future scope.

Seventh in the series, this International Seminar was inaugurated by Mr. K.G. Mohan Kumar, Joint Managing Director, Toyota Kirloskar Auto Parts and Mr. Ben Kitcher, Advanced Manufacturing Research Centre, UK. Mr. P.G. Jadeja, President, IMTMA, Mr. P. Ramadas, Vice President, IMTMA, Mr. L. Krishnan, Past President, IMTMA, and Mr. V. Anbu, Director General and CEO, IMTMA also shared the dais.

At the inaugural session, Mr. Mohan Kumar addressed on the Evolution of Automobile sector and new demands on Manufacturing. Mr. Ben Kitcher gave a keynote address on 'Factory of the Future'.

International experts from Germany, USA, Japan, UK, Switzerland and India facilitated sessions at this seminar. The seminar was attended by around 400 delegates from varied segments of the Indian manufacturing industry such as automotive, aerospace, defence, railway establishments, consumer durables, general engineering, machine tools and other capital goods industries.



The seminar provided users and manufacturers of metal-cutting machine tools with latest solutions that would enhance productivity and provide superior finish to machined components.



# Major Events and Activities



## Symposium on Smart Manufacturing

24 - 25 February 2017: Bengaluru

Indian Machine Tool Manufacturers' Association (IMTMA) organized the second edition of 'Symposium on Smart Manufacturing' on 24 - 25 February 2017 at Bangalore International Exhibition Centre in Bengaluru. The theme of the Symposium was "Evolving the Factory of the Future".

'Automation Buzz', a exhibition displaying automation devices and systems, software and a host of automation solutions was held concurrently.

The Symposium was inaugurated by Mr. Rahul Gangal, Partner, Roland Berger. Delivering the key note address, Mr. Gangal gave an overview of smart manufacturing in the Indian context and said, "There is an imminent need for a policy at national level in India for Industry 4.0. Exports will be boosted by implementation of Industry 4.0."

Spread over two days, the Symposium featured presentations on Industry 4.0, Industrial Internet of Things, Big Data Analytics, Data Acquisition, Data Security, Smart and Cost Effective Automation, and so on. Industry experts from renewed companies addressed the delegates on latest trends and challenges in automation and smart manufacturing.

The symposium overall featured 15 technical presentations and panel discussions on 'Application of Industry 4.0 and IIoT in Indian Context - The Way Forward' and Smart Manufacturing - What is in it for me?

The event was attended by more than 250 delegates from around 110 companies.

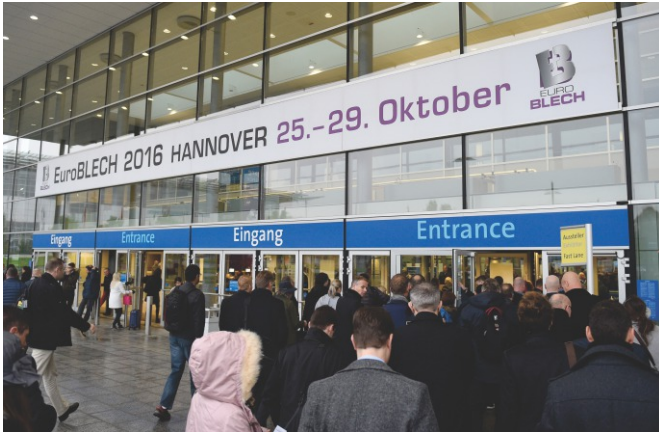




# Major Events and Activities

## Special Events

### **EuroBLECH 2016** 25 - 29 October: Hanover, Germany



EuroBLECH exhibition provided comprehensive overview of the prevailing trends in sheet metal working. Around 1,600 exhibitors from around 40 countries put an impressive range



of machines, tools and systems live on display, across eight exhibition halls. IMTMA organized a group participation to EuroBLECH from Indian companies.

### **JIMTOF 2016** 17 - 22 November: Tokyo, Japan



Twenty-eighth Japan International Machine Tool Fair organized by the Japan Machine Tool Builders' Association was held in Tokyo International Exhibition Centre. IMTMA



participated in this exhibition to gain more insights into global best practices.

### **Machine Tool Indonesia 2016** 30 November - 3 December: Jakarta, Indonesia



Thirtieth edition of Machine Tool Indonesia organized by the Pamerindo Indonesia Trade Event and All world Exhibitions was held at Jakarta International Expo. IMTMA participated in this exhibition to gain more insights into the overseas market and gain inputs about the potential for Indian machine tools in the country. The show witnessed around 20,000 visitors over a span of 4 days.

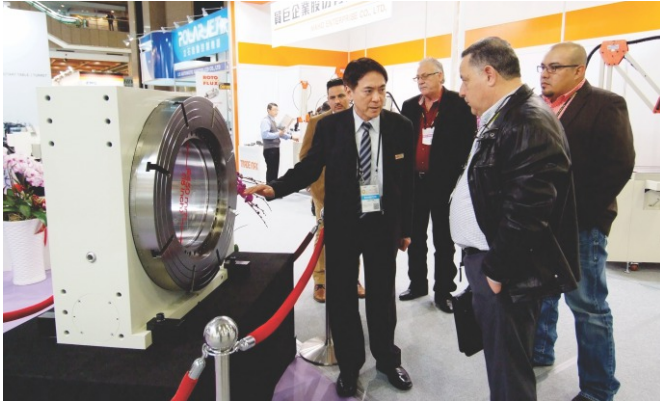


# Major Events and Activities

## Special Events

### TIMTOS 2017

7 - 12 March: Taipei, Taiwan



India was among the 21 countries which participated in the 26th Taipei International Machine Tool Show organized by the Taiwan External Trade Development Council and the Taiwan Association of Machinery Industry. IMTMA participated in the exhibition with an objective of promoting its forthcoming shows, the Delhi Machine Tool Expo 2017 and IMTEX FORMING 2018. IMTMA made a presentation on IMTEX FORMING 2018 to Taiwanese companies and also held one to one meetings with potential Taiwanese companies, international associations and key agencies for group participation and promoting country pavilions in IMTMA trade fairs.

### CIMT 2017

17 - 22 April 2017: Beijing, China



IMTMA participated in the 15th China International Machine Tool Show organized by China Machine Tool & Tool Builders' Association and China International Exhibition Center Group Corporation at China International Exhibition Centre. IMTMA organized an India Pavilion. Six Indian companies, Pragati Automation, Forbes and Company, Grind Master Machines, Jyoti CNC, Ace Manufacturing Systems and Ace Designers, were part of the Pavilion.

### LAMIERA 2017

17 - 20 May 2017: Milan, Italy

IMTMA took part in LAMIERA, an international exhibition dedicated to metal forming machine tool industry. The objective of the participation was to promote IMTMA shows

DMTX 2017 and IMTEX FORMING 2018 & Tooltech 2018 besides showcasing information on Indian machine tool industry.

# Technology & Training

IMTMA Technology Centres are closely associated in skill building initiatives. Over 120 short training programmes, 160 in-house training programmes and 14 long-term skill designing programmes were conducted by IMTMA across the country in 2016-17. IMTMA recorded over 17,000 person-days of training during the year 2016-17 and support Indian manufacturing industry in skill development and upgradation.

IMTMA's Design Institute in Bengaluru, Pune and Gurugram imparts training on skills in machine tool and its components.

## IMTMA Design Institute

### Design of Gearbox – Industrial Machinery

**24 - 29 April 2017: Gurugram**



A six days course on Design of Gearbox-Industrial Machinery was conducted for design engineers and workforce involved in design and manufacture of gear box for industrial machinery. Participants were introduced to gear box, industrial applications, types of gears, gear profiles, gear calculations, gear standards, etc. After undergoing the programme, participants were able to gain complete knowledge on gearbox design, selection of motor for gearbox, gearbox design and sizing, manufacturing drawings of gears and shafts, etc.

### Machine Tool Design - Electrical

**26 September - 22 October 2016: Bengaluru**

**27 June - 24 July 2017: Bengaluru**

The four-week course for electrical and electronics engineers focused on machine design fundamentals and introduction to mechatronics, EPLAN software training, hands-on training on PLC programming & Ladder diagram from Mitsubishi, anatomy of CNC machine tools, machine interfacing and commissioning by FANUC, of electricals for SPM by Kennametal, etc. Industry visits to ACE and Kennametal were also organized.



# Technology & Training

## IMTMA Technology Centre

### Business Excellence through Cost of Quality & Basics of Six Sigma Methodology

18 - 19 July 2016: Pune



The cost of poor quality can be addressed through a popular tool such as six sigma. The DMAIC methodology used worldwide helps in addressing such issues. Keeping this in view, IMTMA organized a two day programme to enable participants understand the concept of cost of quality at all levels and functions.

### Latest Trends and Applications in Fine Blanking Technology

26 July 2016: Pune



Fine blanking technology offers an innovative solution for mass production of functional sheet metal parts. Its unique features and cost effectiveness make this process ideal for a wide range of applications from automotive, electronics and cutlery to tools and hardware.

Keeping this in view IMTMA organized a one day seminar in Pune focusing on all relevant aspects of fine blanking including application of fine blanking process in automotive industry.

### Noise and Vibration Control of Industrial Machines

26 - 27 August 2016: Pune



While the output of machines and quality of product is directly proportional to the level of vibration the noise of machine affects the health of the operator and personnel around machines. It has been found that the unbalance constitute as much as 80 per cent of vibration problems in rotating machines. To study the vibration and noise phenomenon in machines, IMTMA organized a two-day training programme in Pune.



# Technology & Training

## IMTMA Technology Centre

### Machining Dynamics: Transforming Science into Technologies for Improved Productivity

13 -14 September 2016: Bengaluru



Machine tool performance is fundamentally limited by machining process induced vibrations. When these vibrations become unstable, i.e. when the machine tool system chatters, the chatter vibrations can damage the workpiece, break the tool, damage the spindle and its bearing, and also damage the machine itself. To study machining process mechanics, machine tool dynamics, and of process-machine interactions to predict and avoid unstable chatter vibrations, IMTMA organized a two day programme in Bengaluru.

### Sustaining Quality through Non Destructive Testing

28 - 29 September 2016: Bengaluru



NDT is the technology for assessing the soundness and acceptability of an actual component without affecting the functional properties. The technology is used during design, manufacturing, service and life extension of engineering products and systems and analysis of systems for safety, reliability and mission assurance. To expose personnel engaged in industries to practical understanding of this technology in various engineering sectors, IMTMA conducted a two day training programme at Bengaluru.

### Challenges and Solutions in achieving Geometrical Accuracies in Machining

6 - 7 October 2016: Bengaluru



Achieving required level of geometrical accuracies consistently on machined parts is a regular challenge faced by production engineers and process planning engineers. This requires an integral approach encompassing the machine tool, fixtures, process parameters, tool holders and part materials.

IMTMA organized a two day programme in Bengaluru to enable engineers to develop a systematic approach in analyzing geometrical accuracy issues.

# Technology & Training

## IMTMA Technology Centre

### Practical approach to Gears and Gear Design

18 - 19 October 2016: Bengaluru



Power transmission is very important in many industries. To provide a broader understanding of gears and gear design, IMTMA organized a two day training programme on Practical approach to Gears and Gear Design in Bengaluru.

### Hands-on training in Industrial Automation

7 - 19 November 2016: Bengaluru



Automation has become integral part of all manufacturing and process Industries to achieve higher productivity and cost control. For effective Industrial Automation systems, several aspects such as selection of automation elements, system integration and organizational environment need careful consideration. Keeping this in view, IMTMA organized an exclusive 2 weeks course on Industrial Automation, focusing on applications of various elements used in industrial automation in Bengaluru.

### Super Finishing Process - Honing and its Applications

9 November 2016: Bengaluru



In today's manufacturing environment, honing is widely used especially in the automobile industry to improve the performance and efficiency of various components. To meet this demand, it is important to have a skilled workforce with a thorough knowledge of the honing process. Machine operators, line supervisors and engineering managers would benefit much from an in-depth knowledge of the process, the tool mechanism, the various parameters involved and the troubleshooting processes. Keeping this in mind, IMTMA organized a one-day training programme on Super Finishing Process in Bengaluru.

# Technology & Training

## IMTMA Technology Centre

### CE Marking - Compliance requirements for Export Markets

11 November 2016: Bengaluru



With the current emphasis on 'Make in India' and thrust on exports, it is imperative that industries develop their skills and knowledge levels to succeed. To sell a product in global market one needs to understand and comply with the relevant standards and directives right from the design stage. Keeping this in view, IMTMA organized a one day training programme on CE Marking - Compliance requirements for Export Markets in Bengaluru.

### How to make better Castings and run a Foundry Better

22 November 2016: Bengaluru



Inconsistencies in quality of castings worries the customer. To let the foundrymen, understand technology better, IMTMA organized this one day training programme on how to make better Castings and run a Foundry Better in Bengaluru.

### World Class Manufacturing Practices for Achieving Zero Defects

1 - 2 December 2016: Bengaluru



In today's competitive environment industries need to adopt world-class manufacturing practices for achieving zero defects in a consistent manner. World-class manufacturing strategies focus on product quality, JIT production techniques, eliminating waste, workforce management, agility in meeting customer requirements, etc. In order to inculcate best manufacturing practices, IMTMA conducted a two-day training programme on World Class Manufacturing Practices for Achieving Zero Defects in Bengaluru.



# Technology & Training

## IMTMA Technology Centre

### Forging Die Design - A Practical Approach (Hot Forging)

13 - 14 December 2016: Pune



The auto, agricultural and construction industry is continuously evolving and this change is the result of customer demands as well as new environmental norms. Forgings contribute a major share in vehicles in terms of weight, strength and value. To align engineers with the evolving demands from the automotive sector and new demands from global customers, IMTMA conducted a two-day training programme on Forging Die Design - A Practical Approach in Pune.

### Technology Trends at Euroblech 2016

22 December 2016: Pune



EUROBLECH is organized every alternate year at Hannover Messe Germany. EUROBLECH 2016 was held from 24 to 29 October 2016. The event showcased the latest technology developments, offerings and disruptive innovations in the offering. For those who couldn't attend the event, IMTMA organized a one day seminar on Technology Trends at Euroblech 2016 to throw light upon the technological trends at EUROBLECH. The programme focused on automation in press brake, CNC punching press, trends in sheet and plate cutting, etc.

### Structured Innovation (Product/Process) TRIZ Methodology

10 - 12 January 2017: Bengaluru



TRIZ is acronym for Theory of Solving Inventive Problems, a proven way of differentiating a product or a process is by patenting the solution. There are different approaches that can help in this pursuit. Leading corporates have adopted this structured innovation methodology in technology development and addressed critical challenges with success. IMTMA conducted a 3-days training programme on Structured Innovation (Product/Process) TRIZ Methodology in Bengaluru.

# Activities of IMTMA Regional Councils

## IMTMA Regional Council (North)



### Meeting on 20 July 2016: Rohtak

A meeting of IMTMA Regional Council (North) was held at LPS-BOSSARD, Rohtak. Members discussed 'IMTMA - Institute Innovation Collaboration (IIIC)' initiatives. Push-Up Tools Udyog Limited shared its best business practices. A presentation on 'IMTMA SME Club' was also made.

### Meeting on 24 March 2017: Hoshiarpur

An interactive meeting between IMTMA Regional Council (North) and International Tractors Limited was held in Hoshiarpur. The meeting was attended by 27 regional council (north) members.



### Meeting on 16 June 2017: Neemrana

Thirty-first meeting of the IMTMA Regional Council (North) was convened at Havells India Limited, Neemrana.

Regional Council members praised the initiatives of the Government of India as well as speedy roll-out of Goods & Services Tax (GST).

## IMTMA Regional Council (South)

### Meeting on 6 August 2016: Bengaluru

The meeting of IMTMA Regional Council (South) was held in Bengaluru. Guest Speaker Prof. Amaresh Chakrabarti, Chairman, Centre for Product Design and Manufacturing, Indian Institute of Science, Bangalore made a presentation on 'Industry 4.0'. Members interacted on current industry status and actions needed to gear up to the challenge to meet customer expectations and demand. The meeting included a presentation on the IMTMA initiatives such as Pune Machine Tool Expo 2016, Tender News, National Productivity Summit 2016, and SME Proprietors' Club etc.





# Activities of IMTMA Regional Councils

## IMTMA Regional Council (South)



### Meeting on 17 December 2016: Bengaluru

A meeting of IMTMA Regional Council (South) was held in Bengaluru. A presentation on "National Apprenticeship Promotion Scheme" was made by Mr. M.R. Gajre, Regional Director – RDAT Hyderabad and Mr. J.D. Masilamani, Jt. Director - RDAT Hyderabad. A presentation on "Technology Acquisition Fund Programme" was made by Mr. Vimal Kumar, Deputy Director. A presentation on Strategic Business Development - Global Innovation & Technology Alliance (GITA) was also made at the meeting.

### Meeting on 20 May 2017: Bengaluru

A meeting of IMTMA Regional Council (South) was held in Bengaluru. A presentation on "Goods and Services Tax" with focus on manufacturing was made at the Special Session, prior to the meeting. The meeting included a presentation on the IMTMA initiatives such as Delhi Machine Tool Expo 2017, Tender News, GIMT Online, Industry Data, International Seminar on Forming Technology and National Productivity Summit 2017, etc.



## IMTMA Regional Council (West)



### Meeting on 7 October 2016: Pune

A meeting of IMTMA Regional Council (West) was held in Pune. The meeting had presentations on machine tool industry data, presentation by members on new innovations and developments, Pune Machine Tool Show 2016, presentation on future plan for Pune Technology Centre activities and GST by PricewaterhouseCoopers Pvt. Ltd. After the meeting, IMTMA Regional Council (West) members visited TAL - Robotic Application Centre and Assembly Shop.

### Meeting on 21 December 2016: Pune

A meeting of IMTMA Regional Council (West) was held in Pune. Guest Speakers, Mr. Sunil S, AGM and Mr. Manoj Sharma, Manager from SIDBI made a presentation on various schemes of SIDBI.



## Activities of Bangalore International Exhibition Centre

Bangalore International Exhibition Centre (BIEC) was conceptualized and built by Indian Machine Tool Manufacturers' Association (IMTMA) to host industrial exhibitions. The infrastructure at BIEC comprises of 4 state-of-the-art exhibition halls offering gross exhibition space of around 60,000 square metres and support facilities. BIEC is certified as 'Green' project as per Leadership in Energy & Environmental Design (LEED) certified by U. S. Green Building Council for its environment-friendly design and also, received Integrated Management System (IMS) certification.



### Celebrating a Decade of Excellence



BIEC crossed a major milestone by completing 10 years and over this period BIEC has taken great strides in adapting to a changing environment in the exhibition industry. The milestone was celebrated with a commemoration programme during IMTEX on 28 January 2017. BIEC's vision



and its 10 year journey was captured in the form of images and a short film. Commemorating its 10 years journey, BIEC brought out a coffee table book which takes the reader through the entire journey of BIEC.



The commemoration programme celebrating BIEC's 10 years was presided over by Shri R.V. Deshpande, Hon'ble Minister for Large and Medium Industries and Infrastructure, Govt. of Karnataka, Dr. Andreas Gruchow, President, UFI, Mr. Tarun Das, former Chief Mentor, CII and Founding Trustee, Ananta



Aspen Centre, and Mr. Jamshyd N. Godrej, Chairman, Exhibitions - IMTMA. Mr. P.G. Jadeja, President - IMTMA and Mr. V. Anbu, Director General & CEO, IMTMA also shared the dais.



## Activities of Bangalore International Exhibition Centre

### India's Largest Columnless Exhibition Hall (Hall 4) to Ignite Growth in Exhibitions



Continuing with its efforts of providing a world class exhibition facilities, a fourth exhibition hall measuring 17,500 sq. m. was constructed by the Bangalore International Exhibition Centre (BIEC). The exhibition hall which is India's largest columnless exhibition hall is the latest addition to BIEC infrastructure and increases the overall gross space of exhibitions to 59,500 sq.mts.

The new hall brings forth a plethora of benefits for exhibitors and visitors alike. It is newly built, modern and equipped with the latest amenities as seen in any world class exhibition venue:

- Hall 4 comes with a large span of 75m columnless lattice frame structure and length of 235 m.
- Additional entry / exit gates for cargo movement on all sides of the hall totalling 12 numbers. This facilitates quicker movement of cargo trucks and reduces the set-up time for exhibition organizers.
- Six visitor entry / exit gates for smoother footfall.

### Pravasi Bharatiya Divas 2017



BIEC was the venue for Pravasi Bharatiya Divas 2017 organized by the Ministry of External Affairs, Government of India and supported by the Government of Karnataka from 7 to 9 January 2017. This was a historic occasion for BIEC as the



President of India, Shri Pranab Mukherjee, the Prime Minister of India, Shri Narendra Modi as well as the Chief Minister of Karnataka, Shri Siddaramaiah and many national and international dignitaries visited BIEC.

### 11<sup>th</sup> UFI Open Seminar in Asia 2016

IMTMA participated in the sixth edition of India Association Congress held on 26 - 27 August 2016 in New Delhi. The Congress attracted eminent panelists who discussed themes

such as attracting value beyond networking, branding of associations, the future of associations, FCRA law and associations, navigating the fundraising maze, etc.

# New Products Developed by Members During 2016 – 2017

## ELECTRONICA PLASTIC MACHINES LIMITED

1. Injection Moulding Machine [Model - Ventura 250T]
2. Ventura Hybrid Series – New series in which injection side is driven by charge motor leading to simultaneous operation of injection unit and clamping unit thus resulting in fast cycle time and reduced power consumption.
3. Industry 4.0 solution [Model - e2m] (Energy Monitoring Solution) – Can be fitted on any machine and user can keep real-time eye on power consumption anywhere around the globe through internet.

## ETA TECHNOLOGY PRIVATE LIMITED

1. Test Rig for landing gear Actuators for aircrafts – The Test rig has a PLC based control system integrated with an IPC and with Lab View software.
2. Four square test rigs - Using power recirculation are devised to test multiple transmission elements.
3. New Generation metal gathering machine (work without operator assistance).

## FERROMATIK MILACRON INDIA LIMITED

1. Injection Moulding Machines
  - a. Omega 550 for PET preform manufacturing
  - b. Two Platen Maxima Servo Power Machine – 1200T for Automotive part Manufacturing
2. Shuttle Blow Moulding Machine for 5 Liter Lube Container [Model - UMS 220]
3. Twin Parallel Extrusion Machine for Pipe Manufacturing [Model - TP 75i]

## UCAM PRIVATE LIMITED

1. CNC Rotary Tables - The latest Compact Rotary Tables offered with high clamping torque [Model - URX Series Rotary Tables].
2. Direct Drive Tilting Rotary Table with high speed high torque motors [Model - UDDR-450-TN]
3. 6 axis CNC Gear Hobbing Machine [Model - NOAH 400]

## SAHAJANAND LASER TECHNOLOGY LIMITED

1. Tube & Pipe Laser - Cutting Machine
  - Technology offers includes advancement of automation and powerful performance when it comes to tubes and profiles processing technology.
  - It provides freedom to cut distinctive shapes, section profiles with high speed and precision.
2. Flexible Marking Machine [ Model - Akshar Fiber Pro – Flexy]
  - Capable of marking materials ranging in size from small to larger equipment that require extra efforts to place and mark in standard machines
3. Laser Marking Machine [Model – Rex], is crafted to settle in any environment and start operation in seconds.



# New Members enrolled during 2016 - 2017

[As on 30 June 2017]

## **AGILE MACHINERIES PRIVATE LIMITED**

B-43, Nebula Towers  
Besides Grand Bhagwati Bodakdevi,  
Ahmedabad - 380054, Gujarat  
(Manufacturer - Laser Marking Machines)

## **DYNEMECH SYSTEMS PRIVATE LIMITED**

101, Priya Apartment  
Sect-14 ,opp.North Mall, Rohini  
Delhi - 110085, Delhi  
(Manufacturer - Anti-vibration Pads & Machinery Parts -  
Insulation plates, Wedge-Mounts, Levelling Elements &  
Sandwich Mounts etc.)

## **FINE HANDLING & AUTOMATION PRIVATE LIMITED**

Gat No. 804, Pune Bangalore Highway  
Near Toll Plaza, Khed - Shivapur Pune,  
Pune - 412205, Maharashtra  
(Manufacturer - Material Handling Equipment,  
Manipulator, Customised Pick & Place Systems, Rail  
Systems, Gantry Systems, Conveyor Systems.)

## **PRO B PRODUCTS**

No. 342 B, 9th Cross, 4th Phase  
Peenya Industrial Area,  
Bangalore - 560058, Karnataka  
(Manufacturer - Honing Machines & Parts and Accessories  
- Honing Tools, Honing Accessories etc.)

## **SILMAX TOOLS INDIA PRIVATE LIMITED**

316, HAL 2nd Stage  
Ground Floor, Domlor Ward,  
Bangalore - 560008, Karnataka  
(Importer of Machine Tools - Carbide Rotating Tools,  
Cutting Fluids, Cutting Tools & Grinding Wheel.)

## **SURESH INDU LASERS PRIVATE LIMITED**

Sub Plot No. 19, Final Plot No. 117/118  
Ramtekdi Industrial Estate Area, Hadapsar  
Pune - 411013, Maharashtra  
(Manufacturer - Laser Engraving & Cutting System, Laser  
Marking and Cutting Machine, CNC Router)

## **UB SPECIAL MACHINE & TOOL INDUSTRIES**

J81 MIDC, Bhosari,  
Pune - 411026, Maharashtra  
(Manufacturer - Carbide Rods, Carbide Preforms, Carbide  
Wear Parts, Carbide Tip for Cutting Tools, Finished  
Cutting Tools)

## **D. A. STUART INDIA PRIVATE LIMITED**

502 & 503 5th Floor  
Montread Business Centre,  
Pune - 411045, Maharashtra  
(Manufacturer - Water Soluble Coolants, Cutting Oils, Heat  
Treatment Oils, Forging Oils, Rust Preventive & Industrial  
Cleaners)

## **ELECTRONICA INDIA LIMITED**

C/O. Shelik Industries 39/7  
Manikbaug Industrial Estate, Sinhadag Road  
Pune - 411051, Maharashtra  
(Manufacturer - Electro Discharge Machines, VMC, Milling  
Machine)

## **MULTI AXIS CNC ROBOTICS**

Plot No-1, Opp Maruti Kunj  
Sohna Road, Bhomosi,  
Gurgaon - 122102, Haryana  
(Manufacturer - CNC Milling Machine, CNC Engraving  
Machine)

## **REMI ELEKTROTECHNIK LIMITED**

Remi House, Plot No. 11  
Cama Industrial Estate, Walbhat Road, Goregaon East  
Mumbai - 400063, Maharashtra  
(Manufacturer - Electric & Geared Motors)

## **SOLARMAN ENGINEERING PROJECT PRIVATE LIMITED**

6/14, Kirti Nagar, Industrial area,  
New Delhi - 110015, Delhi  
(Manufacturer - Testing Machines, Universal Testing  
Machine, Hardness Testing Machine, Spring Testing  
Machine)

## **Tsi POWER PRIVATE LIMITED**

C1B-212  
GIDC Industrial Estate, Waghodia  
Vadodara - 391760, Gujarat  
(Manufacturer - Static Voltage Regulators (Precision PWM  
Line Conditioner), Isolation Transformer, Step Down  
Transformer, Step Up Transformer, LT Transformer.)

## **YESHWANT INDUSTRIES**

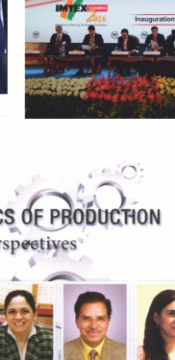
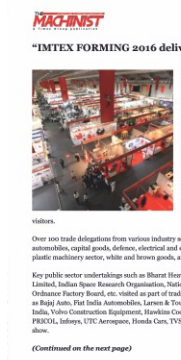
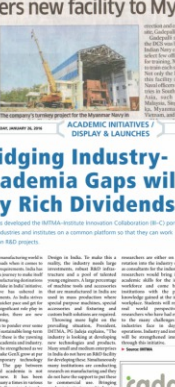
W-38 MIDC, Waluj,  
Aurangabad - 431136, Maharashtra  
(Manufacturer - Tube Notching Machine)

**Total Membership of IMTMA as on June 2017 : 489 Members**

## IMTMA Initiatives

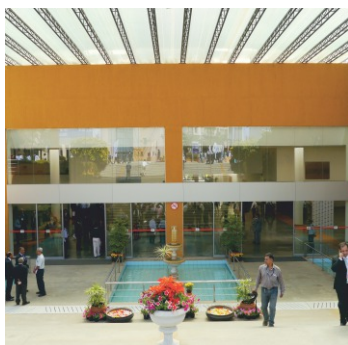


# In the Press





## Glimpses of BIEC



## Notes



## Notes

## Notes



## Indian Machine Tool Manufacturers' Association

### Head Office

Bangalore International Exhibition Centre (BIEC)  
10th Mile, Tumkur Road, Madavara Post,  
Bengaluru - 562 123, Karnataka (India).  
T: +91 80 6624 6600 F: +91 80 6624 6661 E: [imtma@imtma.in](mailto:imtma@imtma.in)

### Regional Office (North)

Plot No. 249 F, Udyog Vihar Sector - 18, Gurugram - 122 015, Haryana (India).  
T: +91 124 4014101 F: +91 124 4014108 E: [imtma.ggn@imtma.in](mailto:imtma.ggn@imtma.in)

### Regional Office (West)

12/5, D-1 Block, MIDC, Chinchwad, Pune - 411 019, Maharashtra (India).  
T: +91 20 6410 0182 / 64100183 E: [imtma.pune@imtma.in](mailto:imtma.pune@imtma.in)