"Precision Components Manufacturing: Need to go beyond Lean and Continuous Improvements? Do you need step change in cost, quality and productivity?"

A flagship program for the higher level professionals in the manufacturing sector.

Indian Machine Tool Manufacturers' Association

www.imtma.in

Workshop on
The System Approach to
Precision Manufacturing - Grinding Processes

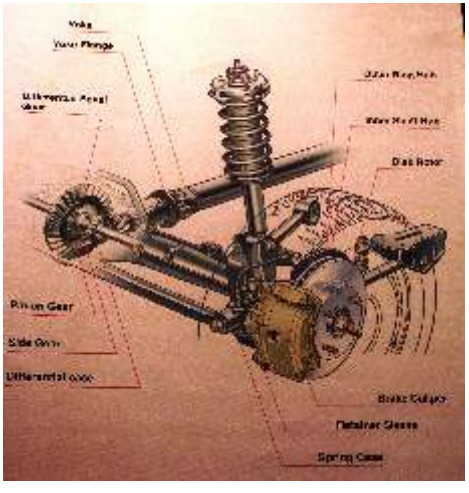
3 - 6 June 2013

Lemon Tree Hotel, Kaushambi
Plot No. 1, East Delhi Mall, Kaushambi
Opp. Anand Vihar Metro Station, Ghaziabad 201010

BACKGROUND

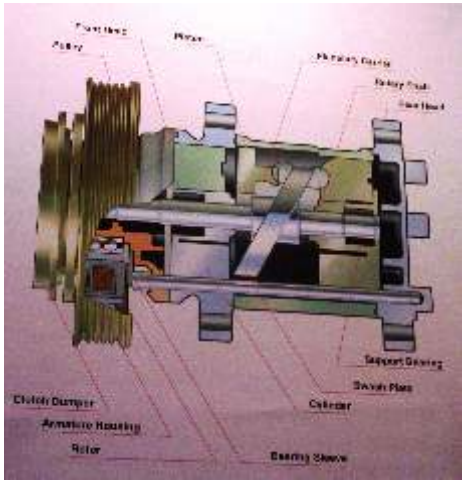
The System Approach

- The System Approach is a methodology for large scale improvement in total cost, quality and productivity.
- It is an approach parallel to and possibly the next wave for manufacturing innovation after Lean and Six Sigma.



Indian manufacturing sector is growing and thus moving FORWARD

- From low cost to high tech. manufacturing
  (where the need for better quality and consistency are increasing)
- Where the scales of manufacturing are growing
  (and cost and productivity pressures are higher)
- From simple manufacturing to “design and manufacturing”, where the higher end professionals are required to have a broader and in-depth knowledge about manufacturing processes – beyond lean and six sigma practices of today.



IMTMA’s New Initiative

- A flagship program of IMTMA to meet the growing needs of trained manpower at the higher level professionals in the manufacturing sector in India.
- It is offered by IMTMA as part of a series of initiatives to train the manufacturing professionals at all levels - low, mid and high levels.

"this course is offered for the second year in a row, after its successful conduct last year".

FOCUS AREAS

Grinding is critical

- Grinding is a critical and in most cases the final manufacturing process for all precision components manufacturing.
- Grinding is a surface generation process that determines the quality and performance of many critical parts, subsystems and systems.
- Grinding is a process widely used in many manufacturing industries:
  - From Automotive to Aircraft manufacturing
  - From Cutting tools to Carbide manufacturing
  - From Bearings to Semi-conductor manufacturing, etc.
- Total cost, quality, productivity and performance of precision components are all very much impacted by grinding processes.

Course Content

- Participants will learn on the method to look at the manufacturing process “as a whole” as a system.
- They will learn how to apply the Science, Engineering and Management principles pertinent to the process together (and not as isolated pockets) to achieve large scale improvements in the process.
- They will learn about the “Microscopic interactions” (i.e) what really happens when the sparks are produced?
- Participants will participate in **hands-on, laboratory style experiments,** where they will collect the data and analyse the data during the grinding process.
- There will be guest lectures from industry specialists on selected topics.

FACULTY

Dr. (Subbu) Subramanian

This workshop will be presented by Dr. K. (Subbu) Subramanian, a world renowned expert in Manufacturing Process Technology. He is the President of STIMS Institute, a Knowledge integration Co. Dr. Subramanian has developed an approach to go beyond Lean and Six Sigma. This approach is outlined in his book titled, "The System Approach – A strategy to survive and succeed in the Global Economy". Dr. Subramanian is collaborating with IIT – Madras and IMTMA on Education initiatives in India.

Dr. Subramanian has over 34 years of Industry experience starting at Ford Motor Company and International Harvester Company, prior to joining Norton Company, which is now part of Saint-Gobain. He has set up a worldwide network of Grinding Technology Centres - in USA, Germany, China and India. These technology centres promote Research, New Business Development, Innovation and Knowledge Integration in precision components manufacturing, through alliances with worldwide customers, machine tool builders, other suppliers, universities and research institutes.

Dr. Subramanian has obtained his B.S. Degree from Osmania University, India and D.Sc. degree from MIT, USA. He has published extensively and holds several patents. Dr. Subramanian is an elected Fellow of the SME and ASME. He is currently working in his second book to be published by ASME Press, titled, "Transformational Skills for 21st Century Technical Professionals".

To know more about the workshop content and its importance to your organisation, click here to view an interview with Dr. (Subbu) Subramanian

Participants Feedback from Last Course

- Finally learnt about the grinding process even after so many years of experience in the field-Grinding, till now was considered an operator's baby. Only he knows how to get things done. Totally dependent on the skill of the operator. Now we have a scientific approach to the process. Answers to "Why" we do many of the things that we do on the shop-floor. Move from "Trial & Error" to "Trial and Test"!
- Scientific way of approaching things, integrate with the customers, system thinking, prioritizing at various levels. I feel this knowledge must percolate down to the machine operators. The course was "eye-opening"!
- Grinding plays 80% of the role in the company. Will help tremendously. Till now, we were doing things unknowingly. This course has opened our eyes to the science behind the process.
- I come from Production Engineering: Very unique approach. Really liked the fact that we looked at the science behind the process theoretically as well as practically. Co-relate with other technical documents. Systems thinking help us understand the "Common language" which is so important. I will apply it in practice.
- Understood grinding with a clearer idea with the help of microscopic interactions. Will apply this to convert "turn-mill centres" to grinding machines. Then take trials using the data-logger. Innovation is very important to survive in the field.
- Class was very interesting, understood science, engineering, management. All are a part of the system. Need to participate with the skilled labour and raise the bar of the skilled labour. Grinding zone information, microscopic interactions – very useful as Sir taught us how we can apply it in our plants

KEY TAKEAWAYS

Participation

- All engineers and managers with over 5 years of experience in precision manufacturing sector.
- Anyone with responsibility to improve the total cost, quality and productivity of precision components manufacturing.
- Anyone responsible for precision components design and development
- Anyone responsible to develop and implement new manufacturing process solutions.
- Anyone in R&D, Research Institutes or academia supporting any of the above developments in the manufacturing sector.

Participant Takeaways

- They will have an ability to look at the grinding process (and other manufacturing processes) with a broader perspective.
- They will not look at the process as a “black box” or something merely random/ statistical. Instead they will start looking at the Science, Engineering and Management aspects as required and relevant to the situation.
- They will have a template and frame work for The System Approach, which they can apply immediately for their precision components manufacturing projects or assignments.
- They will be able to “Zoom in” to look at the technical details and also “Zoom out” to look at the big picture (in terms of engineering and economic issues) as required.
- They will be able to build bridges by connecting the knowledge already available from the shop floor, from the engineering departments, from the suppliers, from the machine tool builders and yes, even from their customers!

PROGRAMME SCHEDULE

03 June 2013

0715 - 0800	Breakfast
0800 - 0830	Registration
0830 - 0900	Test 1
0900 - 1030	Why should we grind?*
1030 - 1100	Break
1100 - 1230	The system approach for industrial processes*
1230 - 1330	Lunch
1330 - 1500	Inputs – Work materials and their response to Grinding Processes*
1500 - 1530	Break
1530 - 1630	Self Introduction by Participants
1630 - 1715	Advances in work materials and trends in grinding - Sona Koyo Steering Systems Ltd.
1715 - 1800	Grinding System Improvement through Machine Tools - Toyoda Micromatic Machinery India Ltd.
1800 - 1830	Break
1830 - 2000	Group Dinner

04 June 2013

0715 - 0800	Breakfast
0800 - 0930	Inputs – Operational parameters and their role in the Grinding system*
0930 - 1100	Inputs - Abrasive Tools & other consumables*
1100 - 1130	Break
1130 - 1300	Measurement & Analysis of Grinding Processes – Part 1*
1300 - 1330	Lunch
1330 - 1400	Travel to MGTL (Micromatic Grinding Tech.)
1400 - 1430	Instruction for Lab Exercise*
1430 - 1830	Laboratory Exercises - 1 & 2 at MGTL

05 June 2013

0715 - 0800	Breakfast
0800 - 0930	Inputs – Machine Tools (Platform for Grinding Processes)*
0930 - 1030	Microscopic interactions*
1030 - 1100	Break
1100 - 1145	Grinding System Improvement through Abrasive Tools - Saint Gobain Abrasives
1145 - 1230	Grinding System Improvement through Cutting Fluids - Castrol India Ltd.
1230 - 1300	Lunch
1300 - 1430	Technical outputs*
1430 - 1500	Travel to MGTL
1500 - 1830	Laboratory Excercise 3 & 4 at MGTL

06 June 2013

0715 - 0800	Breakfast
0800 - 0930	Measurement & Analysis – Part 2*
0930 - 1030	System outputs*
1030 - 1100	Break
1100 - 1130	Test 2
1130 - 1230	Class presentation by participants
1230 - 1330	Lunch
1330 - 1500	Application of the system approach for Grinding Process*
1500 - 1530	Participant's feedback session
1530 - 1600	Open Discussion & Wrap up

Note: * Dr. K. Subramanian

REGISTRATION

Registration on 'First Come First Serve' basis.
Number of seats limited to 30 delegates.

Important Information : Fee includes participation, course material, stationery, breakfast, lunch & tea/coffee. Interested companies are requested to return the attached 'reply form' duly filled along with Demand Draft / at par cheque in favour of **'Indian Machine Tool Manufacturers' Association'** payable at Gurgaon to the address mentioned in the reply form.

For Registrations contact :
Puneet Sharma
Executive
IMTMA
tel : 0124 4014101 - 4
email: puneet@imtma.in

Participant Fee

(Non Residential)

₹ 35,000

+ 12.36 % Service Tax Extra for IMTMA Members & SSI Companies

₹ 40,000

+ 12.36 % Service Tax Extra for Non - IMTMA Members

US $ 1000

for foreign participants.