

INTRODUCTION

Geometric Dimensioning and Tolerancing (GD&T) system eliminates ambiguities in engineering drawings and brings out the designer's intent very clearly. It ensures seamless communication between design, engineering, manufacturing, and quality teams across the entire organization enabling them to work in a concurrent engineering environment. The application of the GD&T system helps to reduce manufacturing and inspection costs drastically.

Many times, having GD&T symbols are understood, doubts prevail about the selection of datum and applying the right parameters during the design process. Selection of the right DRF, as well as GD&T parameters meeting the functionality and manufacturability requirements, is the key to successful design for higher reliability and at a low manufacturing cost.

Keeping this in view, Indian Machine Tool Manufacturers' Association (IMTMA) is organising a 3-day workshop on "**Applying GD&T in Design through Manufacturing - What, Why and How?**" with a practical approach par industry. **All participants will be involved in three projects with a detailed study of design intent, selection of datum, and applying GD&T parameters for the various parts of the assembly based on the functional perspective.**

FOCUS AREAS

Recap of Definitions, Terms, and Symbols of GD&T as per standard

- Tolerance concepts, MMC / LMC / RFS and their applications
- Calculation of bonus tolerance per MMC / LMC
- Definition of datums and Datum reference frame (DRF)
- Fundamental rules of GD&T per ASME
- GD&T Form, Orientation Location, run out, and profile tolerances in brief

Advanced concepts in GD&T

- Virtual Condition
- Worst case boundary
- Datum shift
- Composite Position tolerance
- GD&T Parameter selection criteria

Case studies

- Study of design intent
- Selection of DRF
- Applying the right GD&T parameters
- Validation of GD&T parameters

Practical workshops

- Workshop 1 – Machine tool spindle design
- Workshop 2 – XY Table design

Practical workshops

- Workshop 3 – Industrial Gearbox design
- Interaction and review of all 3 workshops

Unique Feature of the Programme

- Workouts in groups, Presentation and Review
- Practical workshops for GD&T application
- Understanding the product function before GD&T
- Why and How GD&T from performance perception
- Negative impact of inappropriate GD&T on cost and performance
- Debate on why-why of GD&T during application
- Debate on design optimization from GD&T perspective

KEY TAKE AWAYS

- Understand the concepts of GD&T features and correctly interpret GD&T symbols in Engineering Drawings
- Learn about using tolerances at RFS, MMC and LMC conditions and Calculate Bonus tolerance.
- Gain a practical insight into inspection of GD&T features using conventional methods
- Learn how to select right GD&T parameters
- Learn a selection of GD&T parameters through many workouts using actual assembly and part drawings
- Learn through group activity on GD&T parameters selection

PARTICIPATION FEE

Rs. 12000/-

+18% GST

IMTMA Members/ Micro Companies/ Individuals/ Educational Institutions / Students/ IMTMA Non Members/ Others

Group Concession : 10% for 3 to 5 and 20% for 6 and more delegates being nominated from the same company

PARTICIPANT PROFILE

Pre requisites: Basic Knowledge of Engineering Drawing, Limits/Fits/Tolerances, and GD&T principles will be essential for this programme.

FACULTY

This program will be conducted by **Mr. Ravi Shankar Nadig, Mr. HV Rajashekaraand Mr. Ganapathi K N**

Ravi Shankar Nadig, GD&T Expert

He is a Manufacturing and Dimensional Management Professional with 27 years of experience in the Machine tool, Automotive, and Aerospace industries. He has worked as a Scientist in Central Manufacturing Technology Institute (CMTI), Bangalore (9 years) and as a Consultant in Tata Consultancy Services (TCS) for 15 years. His core competency is in the Design and Manufacture of precision machine elements for Defence and Space applications, automotive and general engineering parts. He is a Senior GD&T professional certified by ASME (Y14.5-2009). He holds a Bachelor's Degree in Mechanical Engineering.

HV Rajashekara, Advisor and Head IMTMA Design Institute

He has over 21 years' experience on Machine design from HMT Limited and 6 years from Johnson Electric Group, Hong Kong and was responsible for High precision machines. In addition, he has 7+ years' experience from Training domain at IMTMA

Ganapathi K N, GD&T Expert

He is presently working as Advisor Training at IMTMA, having 16 years of industrial and 16 years of academic/Training experience. He is a mechanical engineer with a post-graduate in metal casting science and engineering. Prior to IMTMA, Ganapathi has worked in various capacities in manufacturing companies. He has a thorough knowledge of GD&T and various Manufacturing process. He has carried out many specialised programmes on GD&T and manufacturing process-related programme for industries. He has also taught these topics to post-graduate engineering students.

For Registration Contact

Rathan
Programme Coordinator
9743180085
rathan@imtma.in
B.L Patil
8088251077
blpatil@imtma.in

Contact Address

INDIAN MACHINE TOOL MANUFACTURERS' ASSOCIATION
@ BIEC, 10th Mile, Tumkur Road, Madavara Post,
Bangalore - 562 123
Tel : 080-66246600
Fax : 080-6624-6658



imtmatraining.67038796@hdfcbank

REGISTRATION : Prior registration for participation is necessary. Number of participants is limited and will be accepted on 'First Come First Serve' basis. A Certificate of participation will be issued to participants.

Important Information : Participation fee includes, course material, working lunch and tea / coffee. Interested companies are requested to register online by clicking on 'REGISTER' button and by filling up the nomination authority and participant's details in specified form.