

## INTRODUCTION

Gearbox is an important mechanical power transmission equipment used extensively in process industries such as steel, chemicals, textile, paper, plastic, ceramics, rubber, cement, sugar, food processing, etc, where there is a demand for high quality power transmission to run their plant & machinery efficiently. With an eye on the practical usage of gearbox in such industries, this program shall focus on introduction to elements of Gear box, types of gears, gear profiles, gear calculations and gear standards. The design input for gearbox design, conceptualization of the gear layout, sizing of gears and shafts, calculations on gears, bearing selection, seals, keys and standard parts used in gear box shall be covered. Part modelling, assembly modelling and detailed drawing using popular design CAD tools shall be demonstrated. DFM and DFMA will be a key points addressed in the training.

Keeping this in view, Indian Machine Tool Manufacturers' Association (IMTMA) is organising a 5 days online programme on "**Design of Gearbox- Industrial Machinery**"

## FOCUS AREAS

- Introduction to Gear box and their advantages and disadvantages over other drives.
- Types of Gear boxes and Applications.
- Types of Gears and general features.
- Nomenclature of Spur and helical gears.
- Gear design and strength calculations.
- Gear Correction factor, Gear Tooth Action
- Worm Gears and their terminology
- Bevel gears and their terminology.
- General design concepts for shaft, Keys and circlips.
- Design of Gear Box- Project.
- Selection of type of gear box.
- Type of gears and stages of reduction.
- Motor selection.
- Gear sizing and strength calculations.
- Estimation of Gear forces.
- Shaft and shaft strength calculation/sizing.

## KEY TAKE AWAYS

- Complete knowledge on gearbox design
- Selection of motor for gear box
- Gears and gear design
- Shaft design and sizing
- Gear box design and sizing
- Manufacturing drawings of gears and shafts
- Systematic design approach

## FEE PER PARTICIPANT (PER LOGIN)

**Rs. 12500/-**

+18% GST

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

**USD 500/-**

**Overseas Participants**

**Group Concession : 10% for 3 to 5 and 15% for 6 and more delegates being nominated from the same company**

## FACULTY

The programme will be conducted by **Mr P. Aruna Kumar** and **Mr. M Khallaq**.

**Mr. P. Aruna Kumar**, a Post graduate in Mechanical Engineer in Machine tool specialisation. With over 36 years of domain expertise in Machine tool design, Assembly, Inspection and Testing. A former DGM, Designs and development, HMT Machine tool division, Bangalore. With rich experience in Gear design, Gear cutting machine design, Gear metrology and also other Machine tool Design.

**Mr. M Khallaq**, MD, M/s Excel CNC machines. Mr. Khallaq has 40+ year experience in machine design from HMT and as well as freelancer.

### For Registration Contact

**Amarendu Debnath**  
**Programme Coordinator**

+91 9977133067  
[amarendu@imtma.in](mailto:amarendu@imtma.in)

**B.L Patil**  
8088251077  
[blpatil@imtma.in](mailto:blpatil@imtma.in)

### Contact Address

**INDIAN MACHINE TOOL MANUFACTURERS' ASSOCIATION**

Plot 249F, Phase IV, Udyog vihar, Sector - 18,  
Gurgaon - 122015

Tata no- +91-124-6463101  
Tel : 0124 4014101 - 04  
Fax : +91-124-4014108



imtmatraining.67038796@hdfcbank