Manufacturing Technology Training
An IMTMA initiative

Machine Tool Spindles - Design Approach
Date : 7 to 11 September, 2026
Venue : IMTMA Technology Centre, Pune

INTRODUCTION

The Machine tool spindle is most sophisticated member in machine tool and plays a vital role for better performance, higher efficiency and accuracy. Design of spindle is very important and a critical activity of machine tool design process. Spindles are integral part of the machine tool and responsible for quality of the final product produced and overall productivity of the machine tools. Sizing of the spindle for machine capability in terms of dimension, power, speed, force and accuracy are the key challenges for machine designers for right machine and right application. Understanding the spindle design process is the first step for overall machine success.

FOCUS AREAS

- Introduction to Spindles
- Types and application
- Bearing selection and arrangements
- Bearing pre load, why and how?
- Design concepts & Calculations of power speed and torque
- Spindle materials and heat treatment
- AC Servo spindle characteristics
- Design of work holding/tool holding system
- Typical spindle drawings

KEY TAKE AWAYS

- Knowledge on types and application of spindles used in metal cutting machines
- Design fundamentals of spindle
- Principles of bearing selection and application
- Understand different configuration of spindles
- Spindle for different application in machine tools
- Understand Bearing selection & pre loading for spindles
- Scientific approach for design of spindles
- Develops confidence on spindle design

PARTICIPATION FEE

Rs. 9999/-	Rs. 5000/-	Rs. 999/-	USD 400/-
+18% GST	+18% GST	+18% GST	**Overseas Participants**
IMTMA Members/ Micro Companies/ Individuals/ IMTMA Non Members/ Others		**Student**	

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

FACULTY

This programme will be conducted by, IMTMA Subject Matter Expert.

He is Former Asst. General Manager, Machine Design & Business Development, Tata Motors Machine tools division, Pune. He is an industry expert with over 37 years of rich experience in Design & Development of General purpose & Special purpose Machine tools.

For Registration Contact

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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.