



SurTech

Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex

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Department of Automobile Engineering

Report on Industry Visit

Topic: Industry Visit

Organized by: Department of Automobile Engineering, Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex

Industry: VE Commercial Vehicles Ltd.

Date: 21st February, 2025

Time: 10:00 am onwards

Venue: Eicher, VE Commercial Vehicles Ltd., NH 19, Mollaber Village, Dankunibil, West Bengal – 712310

No. of Participation: 25

Introduction:

The Department of Automobile Engineering of Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex was organized an industry visit at Eicher on 21st February, 2025 from 10:00 am onwards at Eicher, VE Commercial Vehicles Ltd., NH 19, Mollaber Village, Dankunibil, West Bengal – 712310 for the B.Tech 2nd and 3rd year students as well as Diploma 3rd year students. The students were accompanied by Mr. Supriya Dhara, Technical Assistant, Department of Automobile Engineering. The visit focused on observing chassis structures, powertrains, braking systems, and electric vehicle (EV) technologies in Eicher and Volvo trucks.

The visit aimed to bridge the gap between theoretical knowledge and real-world applications in the commercial vehicle sector, allowing students to understand modern advancements in diesel and electric trucks.

Background:

VE Commercial Vehicles Ltd. is a joint venture between Volvo Group and Eicher Motors, specializing in the manufacturing of medium and heavy-duty commercial vehicles. It plays a key role in advancing fuel-efficient diesel trucks, electric vehicle (EV) technology, and smart mobility solutions for the transport industry.

Objective:

The primary objectives of the visit were:

- To understand the design and structural aspects of commercial vehicle chassis.
- To explore diesel engine components, braking systems, and air suspension mechanisms.
- To study the electric truck powertrain, battery pack, and motor setup.

Overview of the Visit:

During the visit, students were introduced to several key areas, including:

- a) Eicher Pro 6042 Chassis Observation
 - ❖ Ladder-type chassis construction for high-load endurance.
 - ❖ Engine setup and its integration with the chassis.
 - ❖ Driver cabin ergonomics and safety features.
 - ❖ Axle configuration and load distribution analysis.
 - ❖ Air braking system and its role in heavy-duty trucks.
 - ❖ Bellows-type air suspension system for shock absorption.
 - ❖ Air reserve tank function in pneumatic braking.
- b) Eicher Pro 2055 EV – Electric Truck Observation
 - ❖ Powertrain architecture and working mechanism.
 - ❖ Battery pack configuration and energy storage capacity.
 - ❖ Electric motor setup and efficiency improvements.
 - ❖ Driving range, power output, and charging cycle analysis.
- c) Working Principle of Volvo Eicher Commercial Vehicle Ltd. – Presentation & Discussion
 - ❖ Overview of VE Commercial Vehicles Ltd. technology in diesel and electric commercial vehicles.
 - ❖ Emission control techniques for compliance with BS-VI norms.
 - ❖ Fuel efficiency strategies in commercial vehicle operations.
 - ❖ Sustainable transport solutions using hybrid and electric trucks.
- d) 4. Eicher Pro 5016 Engine, Brakes, Oil Tank, and Wheel Observation
 - ❖ Engine performance analysis and power output characteristics.
 - ❖ Braking system functionality, including air brakes and hydraulic systems.
 - ❖ Oil tank design, lubrication, and cooling system study.
 - ❖ Wheel setup, tire structure, and load-bearing capabilities.

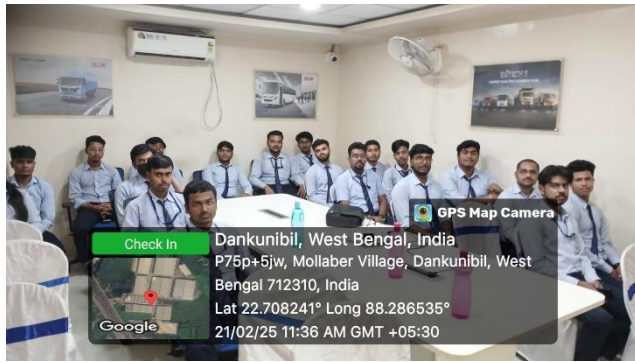
Learning Outcomes:

By participating in this visit, students:

- Acquired in-depth knowledge of commercial vehicle chassis design and assembly.
- Understood the functioning of air braking and air suspension systems.
- Gained insights into electric vehicle powertrains, battery packs, and motor setups.
- Discovered career opportunities in commercial vehicle manufacturing, EV technology, and transportation engineering.

Conclusion:

The industry visit to VE Commercial Vehicles Ltd., Dankuni, was a highly enriching experience for Automobile Engineering students. It provided them with a practical understanding of truck design, chassis structure, braking mechanisms, air suspension, and electric vehicle technology. The visit also exposed students to real-world applications of automotive engineering, manufacturing processes, and sustainable mobility solutions.



Industry Visit at Eicher, VE Commercial Vehicles Ltd., Dankuni on 21/02/2025