



### **Industrial Visit to TATA Motors**

As a part of Finishing School initiative of TEQIP, T & P Office of SPCE has organized a one day visit to Tata Motors Plant Pune on 13<sup>th</sup> March 2017, for students studying elective course, Project Management at T. Y. B. Tech. Electrical. The students studying this course along with faculty, Dr. Rahul Dahatonde participated in this visit.



The TATA motors coordinators guided the students to various workshop and assembly centers and provided the information about the same. Overall, it was a great learning experience for us and visit was extremely informative

After reaching the Tata Motors Pune Plant, students were introduced to Tata group companies and TATA Motors by Mr. Ram Hudlikar. He informed us about History of the Tata Group, Tata Motors and pioneering work done by the company in the field of automobiles and locomotives. He also informed us about the Pune campus which is over 1200 Acres and includes the assemblies of 60 base model vehicles each with 3-4 variances contributing to product portfolio of over 200 vehicles. After the introduction and a small question-answer session, students were escorted to various parts of the manufacturing plant. The students visited following sections of the plant:

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## **1. TRAINING AND APPRENTICESHIP CENTRE:**

- This center has been there in the plant since 50 years.
- Under this centre, TATA Motors provide training and hands on experience to the apprenticeship trainees.
- These trainees are eventually recruited in the company as per the requirement.
- In this centre, various engine sections, gear sections, tools and various vintage car models are preserved for learning of trainees. Some of the rare vintage car models are the 1954 Mercedes Benz truck and the Vintage model Silver Ghost 1926.

## **2. DYE WORKSHOP:**

- TATA Motors use their own dye workshop for making dyes for their parts of vehicle since 1967.
- In addition to Tata Motors, other automobile companies such as, FIAT, TOYOTA, HONDA, FORD, etc. also get their dyes manufactured from this dye workshop.

## **3. COMMERCIAL GEAR FACTORY**

- In this section of the plant, the gearbox assemblies of heavy, medium and light commercial vehicles are manufactured.
- The manufacturing capacity of this plant is approximately 800 gears per day, out of which most are used for parts in the automobiles and rest are sold as spare parts.
- Upto 40 ton, aluminium gears are used and above that gears are made from cast iron.
- Automated machines are used in this section; in such a way that one operator operates three such machines.

## **4. ASSEMBLY OF HEAVY VEHICLES:**

- This assembly line is the oldest one and comprises of manual assembly and is almost 750m long.
- The line has manufactured the oldest model of this type named TATA SE1210 in 1977 and now manufactures the latest model as well which is known as LPT 1109 hex2.

## **5. MANUFACTURING OF COMMERCIAL VEHICLES:**

- This is completely automated section and is mostly operated by robots.
- The machineries used are manufactured by HITACHI-ZOSEN
- The main line makes use of a machine called Robot Auto Stamping.
- The robot auto stamping basically converts material into the desired shapes by using equipments called Robot Destacker and Robot Loader.

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- The old or damaged dyes are also repaired in this unit.

#### **6. CAR PLANT:**

- This plant is the oldest non-commercial vehicle manufacturing unit in Pune works.
- Previously, this plant was run by TATA Motors in collaboration with Mercedes-Benz till 1994 but later on the collaboration was taken off and TATA motors started manufacturing vehicles by themselves since 1998.
- The famous Revetron petrol engine of TATA motors is also manufactured here.
- Manual and automated welding of the parts is also done and machineries for the same are imported from Japan.
- 3 automated machines from sides and 3 from the top are used for the welding of various sides of the body.
- After this section there is a long assembly line of models TATA Bolt and TATA Zest.

#### **7. PAINTING SECTION:**

- This section was forbidden to enter since it is made dust proof.
- First car painted under TATA's own manufacturing was in 1994.
- Robots are used to paint the vehicles such that two robots paint and process is carried out over 1.5 km long conveyor and takes about 5 hours.
- Aluminium and Asbestos sheets are added in the body for maintaining temperature inside the car.

#### **8. TESTING OF VEHICLES:**

For testing purpose various certified units are made in the Pune works and also other facilities are provided. The various tests done are as follows:

- Electronic Circuit test
- Engine start test
- Break test
- Speed test ( high speed track of max 140 kmph )
- Suspension and transmission test
- Crash test
- Simulated road test

#### **10. HEXA ASSEMBLY**

- Tata Motors latest launch, Hexa is manufactured in this section of the plant.
- This model is available 4 by 4 and 4 by 2 type with both auto and normal transmission.

- The test and final inspection of HEXA is done in this unit itself.

**Following are some images of TATA motors industrial visit**

