

A Report

On

“Industrial Visit – SHREE SAINATH INDUSTRIES LTD”

For the Students of Mechanical Engineering Department. (Semester – IV)

From: 5th & 6th February 2020.

- **Objective:** “Oil pump Manufacturing process by casting and machining related to the basics of Manufacturing process subject in Sem IV.”
- **Venue:** “Shree Sainath Industries ltd, Naroda, Ahmedabad”
- **Number of Students: 184** (IV semester, Mechanical Engineering)
- **Faculty Coordinator’s:**
 1. Mr. Hiren Makwana (Asst. Prof. Mechanical Engg. Dept.)
 2. Mr. Krushnakant R. Jani (Asst. Prof. Mechanical Engg. Dept.)

1. OVERVIEW

Shree Sainath Group of Company's namely Shree Sainath Enterprises Established in 1978 by Mr. P.K Bharathan, a technocrat entrepreneur, the company's first product was purely Oil pump's. Over the years, the product range has swiftly grown to encompass a large variety of assemblies and components for various engine modules. Under the leadership of Mr. P.K. Bharathan the company's priorities have always been to give in quality products along with the best value to our customers.

Getting recognized for its achievements is a regular feature at Shree Sainath Industries. Its engineering capabilities, manufacturing expertise and export performance have given us an edge for continual improvement in Quality, Delivery, as well as cost control.

They now have a wide range Of applications for Massey Ferguson / Perkins, Ford, New Holland, Klockner Humboldt Deutz, Landrover, Range rover, Mercedes, Cummins, International Harvester, Bedford, Caterpillar, Nissan, Hercules, Mack, Detroit Diesel, & John Deere Applications.

Shree Sainath Industries has also recently diversified into other Applications such as the Balancer Assy Unit for the Massey Ferguson series.

We now also Specialize into Hydraulic Pumps, Transmission Pumps and Power Stearing Pumps.

2. ORGANIZATIONAL STRUCTURE OF THE VISIT:-

The number of students who attended the visited Shree Sainath Industries Ltd is 184 accompanied by 5 faculties. On the day of visit, the students and the faculty reached the venue at 10:00 am. The students as well as faculty travelled by their own vehicle and reach the place accordingly on time. A brief overview of Oil pump manufacturing was given by Mr. Rakesh Chaudhry and Mr. Rakesh Parmar to the students and their attendance was taken.

VISIT. SHREE SAINATH INDUSTRIES LTD

The visit was started at Shree Sainath Industries around 10:00 am. The number of students was divided in batch of 30 to 38 and visit was done on two consecutive days of Mechanical branch.

Visit was initiated by taking students to different departments. After meeting General Manager, we were introduced to floor incharge Mr.Rakesh Parmar to us who was expert at the company.

In striving for excellence, They at SSI, undertake product development with futuristic perceptions of Testing, Research, Product Development constitute an on-going, sustained exercise, ensuring minimal downtime and eliminating futile effort.

Nearly three decades of performance have justified and vindicated the value of investment in technical skills, and in devices needed to maintain a state-of-the-art department directly linked to their manufacturing facilities.

The activities and research at SSI are Product & Application Oriented.

Client specified parameters are closely studied. Technical Feasible, appropriate, and economically logical alternative are worked out in conformity with global engineering standards.

When their efforts meet benchmarks and if their pumps can create precedents in performance, It is sheer quality, therefore, that has fetched us multinational client interest. Now, the more is the demand for SSI products, the more intensive and hectic is the pursuit of study and research.

Never being complacent, we ever strive to go the extra mile, thanks to the efforts of our people, and above all - to our clients whose requirements. for us, are opportunities in disguise.

The credentials of the company have been slowly and steadily punctuated by our modest milestones as we forge ahead with sustained growth and concerted efforts in consolidating our export drive.

We are already exporting to countries, such as USA, UK, Europe, Middle-east, Turkey, South Africa, and South East Asia, to name a few.

Manufacturing Process of Oil Pump

Casting Process



Fig : Match plate & Single piece Pattern

Raw material used for oil pump casting is cast iron FG200. For this process match plate pattern is used in which total 4 designs of oil pump are adjusted. Using pattern sand, mould is prepared by squeezing machine and fue patterns are made by hand moulding process. After preparing mould, molten metal is poured into mould cavity by melting in induction furnace. Solidification time of 20 minutes is given then cast component were obtained by

fettling. After obtaining solid components, machining processes were done to obtain final finished product.



Fig: Pouring of molten metal in cavity

Machining

After obtaining cast component, first induction hardening was done to improve surface hardness of the component. Then to prepare final assembly, some of the parts are machined to exact shape which are helical gear, shaft, rotor, cover plate and plunger. Helical gears were manufactured by hobbing machine. Remaining parts was finished in CNC machine. After preparing assembly, it was tested by test rig and visual inspection method.

CUTTING MACHINE



FINISHING MACHINE



OPERATION USING VMC MACHINE

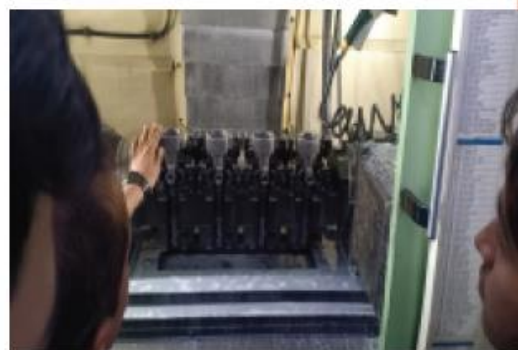




Fig : Day 1 at Sainath Industry



Fig : Day 2 at Sainath Industry

CONCLUSION

The visit ended at 5:00 pm, the faculties and students return their home. The overall response of the students was positive – below are listed feedbacks of few of the students

1. In future we are looking forward for such type of visit.
2. The concepts were clearly explained.

3. Seen new technology apart from our syllabus.
4. Many of their concepts of Automobile Engines were cleared during visit.

ACKNOWLEDGEMENT

The coordinators are grateful to the College authorities, Management and the Vice President – Dr. Manish Shah (LJK Trust) for supporting them to carry out such a program and for providing the support. Secondly, the coordinators would like to thank Director (L.J.I.E.T.), who encouraged the coordinators for this program. Also, the coordinators extend their gratitude to the Head of the Department (Mechanical Engineering), who has played a major role by being there at the time of need. Last but not the least; the students did a wonderful job and the coordinators are proud of each of their students.