



## MECHANICAL ENGINEERING DEPARTMENT

### A Report on one day Industrial Visit to “Techno Gear Works Pvt Ltd., Valsad”

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#### ABOUT FACTORY

The wheel is one of the world's greatest inventions. Wheels have been adapted to pulleys and gears, and these inventions have revolutionized industrial production.

The group companies, Supreme Industrial Works and Techno Gear Works Private Limited, have been in the business of manufacturing High Precision Gears and Special Gear Boxes since 1950.

They have been supplying various industries with gears ranging in size from 10mm to 3000mm for the past five decades. They offer all types of gear transmissions, including Spur, Helical, Straight Bevel, Spiral Bevel, Worm Wheel, Worm Shaft, Rack & Pinion and Spline Shaft. From their humble beginnings with just four machines, they have now grown into a full-fledged gear manufacturing unit with 125 machine tools including various inspection facilities.

#### OBJECTIVES OF THE VISIT

The objective of the visit is to make the students aware of various machines used for manufacturing of different types of gears and the entire process of gear manufacturing and to keep them updated with the latest technology in the field of Computer Aided Manufacturing such as CNC machines etc.

#### INDUSTRY DETAIL

- 1. Name Of Industry:-** Techno Gear Works Private Limited
- 2. Address :-** 137, G.I.D.C., Gundlav, Valsad – 396 035, Gujarat, India
- 3. Date Of Visit:-** 01 /03/2025
- 4. Year / Semester:-** 2nd Year/4th Semester
- 5. No. of Students:-** 24
- 6. No. of Faculties:-** 2

#### ACTIVITIES AND OUTCOME OF THE VISIT

#### VISIT INSIGHT

With the use of sophisticated machinery, Technogear is able to provide a range that is efficiently



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catering to the demands of their clients. Techno gear undertake different processes for the production of their range of gears. All these processes such as gear hobbing, gear shaping, gear grinding etc. are an integral part of manufacturing and are undertaken by experienced workforce.

**Following process are undertaken for the manufacturing of various products:**

### **Blanking**

The quality of gear blanks directly affects the quality of gears. With CNC turning machines, we are able to maintain consistent close tolerances on quality parameters that are required by subsequent gear cutting operations.

Our equipment includes CNC Vertical & Horizontal machining centres, CNC VTL conventional machines such as Jig Boring, VTL, broaching machines, Key Way milling machines, and slotting machines, etc.

### **Gear Cutting**

The gear cutting section is where the critical operations of cutting the gear teeth are performed. The gear cutting section features CNC gear hobbing machines, Gear Shapers, Gear Shavers, Straight Bevel Generators, Spiral Bevel Generators, and Worm Mills.

The gear parameters are continuously checked to ensure quality.

### **Heat Treatment**

We have the state-of-the-art Heat Treatment facility. The furnace is versatile and does case carburising, hardening, tempering with press quenching facility.

Temperature controllers, and optimum process cycles depend on the raw material compositions and the exact heat treatment characteristics required for heating, carburising and diffusion.

### **Finish Grinding**

Finish grinding is done on outside diameters to close tolerances in order to accommodate bearings, oil seals etc. Extreme accuracy is maintained on bore diameters to maintain the run out between the PCD of the gear with bore. CNC Surface grinding achieves the micro finish needed for applications such as thrust washer or to maintain overall height.

### **Gear Grinding**



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The gear tooth is finished ground on 5 axis CNC gear grinding machine. We are equipped with single flank, double flank and form grinding machines. The finished gears confirm to DIN class 4.

Worm thread grinding and worm thread finish are carried out on a 5 axis Worm grinding machine.

### **Packaging**

Packaging plays an important role in ensuring that our quality products reach our customers without any damage. Wooden boxes are heat treated to ISPM - 15 specification or fumigated to international standards.

### **APPRECIATION**

The students got the opportunity to learn about different products and process which they come across in the subject **Manufacturing Processes**. In addition, proper guidance was given by Mr. Bhupendra Kansara, Director & CEO, Mr. Ishwar Rathod, HR head with **Mr. Bhavesh**, at every corner of their plant. We S.N.P.I.T. & R.C. Mechanical Engineering department team are really thankful to the Techno gear Works Pvt. Ltd. and their team.

### **Report prepared by,**

Prof. Mehul M. Jikar

(Mechanical Engg. Dept.)



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**PARTICIPANT DETAILS: ANNEXURE – I**

**SNPIT&RC, UMRAKH**  
**MECHANICAL ENGINEERING DEPARTMENT**  
**INDUSTRIAL VISIT at Technogear Valsad, STUDENT LIST SEM 4**  
Date: 1/3/2025

Sr. NO.	PEN	Name	Signature
1	230490119001	Pragnesh Nihar Barde	
2	230490119002	Aadarsh Devichand Chaudhari	
3	230490119003	Jatin Nitinbhai Chaudhari	
4	230490119004	Meetkumar Girishbhai Chaudhari	
5	230490119005	Tusharkumar Sureshbhai Chaudhari	
6	230490119006	Sachin Ashok Dubey	
7	230490119007	Jenish Jayantibhai Patel	
8	230490119008	Neha Maheshbhai Patel	
9	230490119009	Nilay Chetanbhai Patel	
10	230490119010	Nikitaben Dilipbhai Thorat	
11	230490119012	Hardik Kumar Kamlesh bhai Vasava	
12	230490119013	Mahir Kumar Paresh Bhai Vasava	V. M. P.
13	240493119001	BARAF NARESHBHAI RAMUBHAI	
14	240493119003	BHARATH S	
15	240493119004	BHARTI JAY ANILKUMAR	
16	240493119006	CHAUDHARI ANKITKUMAR KANCHHIBHAI	
17	240493119008	CHAUDHARI DUSHYANTKUMAR NARESHBHAI	
18	240493119009	CHAUDHARI JAYKUMAR NILESHBHAI	
19	240493119010	CHAUDHARI KULDIPKUMAR ASHOKBHAI	
20	240493119012	CHAUDHARI PARTHKUMAR ANILBHAI	
21	240493119013	CHAUDHARI PRITESHBHAI NARESHBHAI	
22	240493119014	CHAUDHARI SMIT RAJENDRABHAI	
23	240493119015	CHAUDHARI TAMANNABAHEN AMARSINGBHAI	
24	240493119016	DAVARIYA CHANDRAKANT SANJAYBHAI	
25	240493119018	DEORA BHAWANISINGH RAMSINGH	
26	240493119019	DESALE NIKHILKUMAR VINODBHAI	
27	240493119020	DHOBHI NILESH RAMNAVALBHAI	
28	240493119021	DIVELIYA FIYANSH BHAVESHKUMAR	
29	240493119022	DURAIVEL P	
30	240493119024	GAMIT HANOKHKUMAR LALJIBHAI	
31	240493119025	GAMIT JAYDIPKUMAR ANILBHAI	



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32	240493119026	GANVIT NIKUNJKUMAR SUNILBHAI	
33	240493119027	GONDALIYA DIVYESH PRAVINBHAI	
34	240493119028	JADEJA DEEPPRAJSINH KULDEEPSINH	
35	240493119029	LAD KRISH DIPAKBHAI	
36	240493119030	LAD SAHIL RAKESHBHAI	LadsahilR
37	240493119031	MALAVIYA SAGAR RAMESHBHAI	
38	240493119032	MALEK MOHAMMEDTEHFUR ABDULSALAM	
39	240493119034	PARMAR DEVKUMAR BALVANTBHAI	
40	240493119035	PARMAR JAYKUMAR SUNILBHAI	
41	240493119036	PATEL AKSHAYKUMAR MAHESHBHAI	
42	240493119037	PATEL BHOOMINKUMAR SHAILESHBHAI	B.S.Patel
43	240493119038	PATEL HARSHKUMAR YUVRAJ	
44	240493119039	PATEL KAMAL RAJESHBHAI	
45	240493119040	PATEL KENIL SUNILBHAI	
46	240493119041	PATEL MILAN JITENDRABHAI	M. J. Patel
47	240493119042	PATEL NEEL JAYESHBHAI	
48	240493119043	PATEL NIRAJKUMAR SHANTILAL	
49	240493119046	RATHOD GANESH JASHUBHAI	
50	240493119047	RAVAL PRATIKBHAI KISHORBHAI	
51	240493119048	SANGDOT YUVRAJSINH PRADIPSINH	Y.P. Sangdot
52	240493119049	SHAH HARSH MOHANBHAI	Harsh.m.shah
53	240493119050	SHAIKH ADNAN IQBALI IUSEN	
54	240493119051	SHAIKH MOHAMMADFAIZ MOHAMMADAMIN	
55	240493119052	TANDEL SAMYAK MAHENDRABHAI	
56	240493119053	TANDEL SAURAVKUMAR PARESHBHAI	
57	240493119054	VAJA YASH SAILESHBHAI	
58	240493119055	VASAVA AMILBHAI CHHOTALAL	@Vasava
59	240493119056	VASAVA AMITBHAI ILAMJIBHAI	AS
60	240493119059	VASAVA KARANKUMAR PRAVINBHAI	
61	240493119061	VASAVA PRAFUL MUKESH	
62	240493119062	VASAVA SNEHALBHAI BAHADURBHAI	
63	240493119064	VOHRA SHAKIRMAHAMMAD TAUSHIFMAHAMMAD	

Faculty accompanied :

Prof- Ankur B. Ganiat

Prof- Vipul J. Varia.



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**ANNEXURE II VISIT SCHEDULE**

<b>SCHEDULE OF VISIT</b>		
<b>Date &amp; Time</b>	1st March 2025 & 10:30 AM	
<b>Venue</b>	<b>From:</b> SNPIT & RC, Umrahk,Bardoli	<b>To:</b> Techno gear Works Pvt. Ltd., 137, G.I.D.C., Gundlav, Valsad – 396 035, Gujarat, India
<b>Staff Accompanied</b>	<b><u>Prof. Ankur S. Gamit</u></b> Assistant Professor	<b><u>Prof. Vipul J. Variya</u></b> Assistant Professor
<b>Visit Module</b>	Working Factory's Machinery	
<b>No. of Benefited Students</b>	24	



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**ANNEXURE III PHOTOGRAPHS**

**A. VISIT PHOTOS**





# SITARAMBHAI NARANJI PATEL

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