




### Activity Report


S.No.	Title of the information	Information in brief																																																				
1	Identified Gap No/s.:	14																																																				
2	Activity Type:	Industry Visit																																																				
3	Activity/Event Organizer/s or Coordinator/s:	Dr. S. N. Topannavar, Professor and HOD, Mechanical Engineering Department, HIT Nidasoshi																																																				
4	Title of the Activity/Event:	Industry Visit at Divgi Industries Private Limited, Sirsi																																																				
5	Date:	04-06- 2022																																																				
6	Venue:	Banavasi Road Sirsi, Karnataka																																																				
7	Objectives:	<div>1. To understand the manufacturing process of spur and the helical gear.</div> <div>2. To understand various tools and techniques used in gear manufacturing.</div> <div>3. To understand the G code and M codes used in the Gear manufacturing process.</div> <div>4. To Understand various materials used in the gear manufacturing process.</div> <div>5. To understand the layout of the industry.</div> <div>6. To understand Gear inspection reports and interpretation</div>																																																				
8	Activity Outcomes:	<div>1. Gears can be manufactured by a variety of processes, including casting, forging, extrusion, powder metallurgy, and blanking.</div> <div>2. Application of gear</div> <div>3. Differentiate between the spur gear and helical gear.</div> <div>4. Gears can be made of all sorts of materials, including many types of steel, brass, bronze, cast iron, ductile iron, aluminum, powdered metals, and plastics.</div>																																																				
9	Details of Resource Person/s with contact details:	Quality Assurance Engineers, Divgi Industries Private Limited, Sirsi																																																				
10	Finance Management:	Expenses incurred by the Department Association (AIMSS)																																																				
11	No. of participants	Students: Boys: 10 & Girls : 00, Staff: 02																																																				
12	Mapped POs, Weight-age assigned & %age of attainment: PO (Weight-age)	<table><tr><th>PO mapped</th><th>Weight-age assigned (1/2/3)</th><th>%age of Attainment</th><th>Level of attainment</th></tr><tr><td>PO1</td><td>3</td><td>99.6</td><td>2.988</td></tr><tr><td>PO2</td><td>3</td><td>99.6</td><td>2.988</td></tr><tr><td>PO3</td><td>3</td><td>99.6</td><td>2.988</td></tr><tr><td>PO4</td><td>3</td><td>99.6</td><td>2.988</td></tr><tr><td>PO5</td><td>3</td><td>99.6</td><td>2.988</td></tr><tr><td>PO6</td><td>3</td><td>99.6</td><td>2.988</td></tr><tr><td>PO7</td><td>3</td><td>99.6</td><td>2.988</td></tr><tr><td>PO8</td><td>3</td><td>99.6</td><td>2.988</td></tr><tr><td>PO9</td><td>3</td><td>99.6</td><td>2.988</td></tr><tr><td>PO10</td><td>3</td><td>99.6</td><td>2.988</td></tr><tr><td>PO11</td><td>3</td><td>99.6</td><td>2.988</td></tr><tr><td>PO12</td><td>3</td><td>99.6</td><td>2.988</td></tr></table>	PO mapped	Weight-age assigned (1/2/3)	%age of Attainment	Level of attainment	PO1	3	99.6	2.988	PO2	3	99.6	2.988	PO3	3	99.6	2.988	PO4	3	99.6	2.988	PO5	3	99.6	2.988	PO6	3	99.6	2.988	PO7	3	99.6	2.988	PO8	3	99.6	2.988	PO9	3	99.6	2.988	PO10	3	99.6	2.988	PO11	3	99.6	2.988	PO12	3	99.6	2.988
PO mapped	Weight-age assigned (1/2/3)	%age of Attainment	Level of attainment																																																			
PO1	3	99.6	2.988																																																			
PO2	3	99.6	2.988																																																			
PO3	3	99.6	2.988																																																			
PO4	3	99.6	2.988																																																			
PO5	3	99.6	2.988																																																			
PO6	3	99.6	2.988																																																			
PO7	3	99.6	2.988																																																			
PO8	3	99.6	2.988																																																			
PO9	3	99.6	2.988																																																			
PO10	3	99.6	2.988																																																			
PO11	3	99.6	2.988																																																			
PO12	3	99.6	2.988																																																			





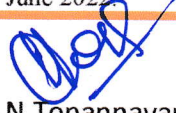
		<b>S J P N Trust's</b> <b>Hirasugar Institute of Technology, Nidasoshi</b> Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi. <b>Accredited at 'A' Grade by NAAC</b> <b>Programmes Accredited by NBA: CSE, ECE, EEE &amp; ME.</b>			Mech. Engg. Dept.
					AIMSS
					Activity Report
					AY:2021-22
13	Mapped PSOs, Weight-age assigned & %age of attainment: PSO (Weight-age)	PSO mapped	Weight-age assigned (1/2/3)	%age of Attainment	Level of attainment
		PSO1	3	99.6	2.988
		PSO2	3	99.6	2.988
		PSO3	3	99.6	2.988
14	Outcomes achieved/Impact analysis:	1. The activity mapped with PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, and PO11 & PO12 was found satisfactory with an attainment level of 2.988 each against the Mapped values during the impact analysis. 2. The activity mapped with PSO1, PSO2 & PSO3 was found satisfactory with an attainment level of 2.988 each against the Mapped value during the impact analysis.			

### Photo Gallery

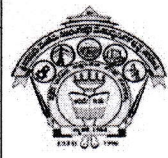


  
 Mr. Vivekanand Kambi  
 AIMSS Secretary


  
 Prof. M.M. Shivashimpi & Prof. D.N. Inamdar  
 AIMSS-Cordinator/s

  
 Dr. S.N. Topannavar  
**HOD**  
**Mechanical Engg.**  
**HIT, Nidasoshi**





S J P N Trust's  
**Hirasugar Institute of Technology, Nidasoshi.**  
*Inculcating Values, Promoting Prosperity*  
Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU  
Belagavi.  
Accredited at 'A' Grade by NAAC  
Programmes Accredited by NBA: CSE, ECE, EEE & ME

**Mech.Engg.Dept**

**Industrial Visit**

**Permission letter**

**2021-22 (Even Sem)**

Date: 28-05-2022

To,

The Principal,

HSIT, Nidasoshi

FWD Through: HOD, Mechanical Engineering Department.

Respected sir,

Subject: Seeking permission for Industrial visits during 1<sup>st</sup> to 4<sup>th</sup> June 2022 reg.

We the students of 8<sup>th</sup> Semester Mechanical Engineering Department are interested to visit the industries, Divgi Industries Private Limited, Banavasi Road, Sirsi and Rajeev & Company, Belagavi during 1<sup>st</sup> to 4<sup>th</sup> June 2022. So, we kindly request you to permit us for the same. We enclosed the duly signed list of students & staff and industries e-permission letters.

We hope you will do the needful.

Thanking you sir,

Yours faithfully

*Arun*

Mr. Arun Tubachi  
Student Coordinator

Place: Nidasoshi

Date: 28-05-2022



*Permitted*  
*[Signature]*  
*28/5*

**PRINCIPAL**  
Hirasugar Institute of Technology  
Nidasoshi- 591 236

*Forwarded for permission*

*[Signature]*  
*28/05/2022*

**HOD**  
**Mechanical Engg.**  
**HIT, Nidasoshi**



## Permission to visit industry on 4th June 2022

messages

I.M. Shivashimpi <mmshivashimpi.mech@hsit.ac.in>

Sat, May 21, 2022 at 4:19 PM

to: mknaik@divgi-tts.com

cc: HOD MECH <hod.mech@hsit.ac.in>

cc: "vijayalaxmibugadi@gmail.com" <vijayalaxmibugadi@gmail.com>,

vivekanandakambi@gmail.com" <vivekanandakambi@gmail.com>

Dear sir,

With reference to the telephonic conversation with Prof. Mohan Futane, Assistant Professor, Mechanical Engineering Department, Hirasugar Institute of Technology, Nidasoshi.

After Academic Curriculum of VTU, Belagavi, I am hereby seeking permission to visit your esteemed industry for final year students on 4<sup>th</sup> June 2022 at 10.00 am. So I kindly request you to permit us to visit your industry. The details of staff and students attached herewith.

Thanking you sir,

With Regards...

**Dr. M. M. Shivashimpi** M.Tech., Ph.D.

Assistant Professor

Event Coordinator

Mechanical Engineering Department

Hirasugar Institute of Technology

Nidasoshi-591236, Karnataka, India

Cell: 9742197173, Mail: [mmshivashimpi.mech@hsit.ac.in](mailto:mmshivashimpi.mech@hsit.ac.in)

Web; [www.hsit.ac.in](http://www.hsit.ac.in)

Phone: +91-8333-278887, Fax: 278886



Staff and Student List @ Sirsi.pdf  
764K

Ianjunath Naik <mknaik@divgi-tts.com>

Fri, May 27, 2022 at 2:24 PM

to: "M.M. Shivashimpi" <mmshivashimpi.mech@hsit.ac.in>

cc: HOD MECH <hod.mech@hsit.ac.in>



With reference to the below email We allowed for industrial visit on 4/6/2022. Following things to be ensured before entering the organization.

1. Mask
2. Safety shoes
3. Uniform

Regards,

Manjunath K N

[Quoted text hidden]

  
DIVGI TORQTRANSFER SYSTEMS PVT. LTD.  
BANAVASI ROAD  
SIRSI-581 401 (N.K.)



## UNDERTAKING

I the undersigned Mr/Ms. Naveenkumar Ganachari.....studying in 8 Semester, Mechanical Engineering Branch of Hirasugar Institute of Technology, Nidasoshi, interested to participate in industry Visits of Divgi Industries Private Limited, Banavasi road Sirsi and Rajeev and Company, Belagavi on 04/06/2022. I will obey the respective rules, regulations of the Institute and company and spot instructions given by the concerned authority during the visit without fail. I have undergone Medical checkup and fit to participate in Industry Visit. If anything happens wrong with me during the journey, I only responsible. The institute or the faculty of the institute is not responsible for any kind of damage or accidents or uneven things happen with me. I will not claim any kind of damages from institute. I have taken prior permission from my parents to participate in the above said event.

Name:	<u>Naveenkumar Ganachari</u>	USN:	<u>2HN18ME019</u>
Mob. No:	<u>8971791429</u>	Parent Mob. No:	<u>9972947089</u>
Permanent Address:	<u>A+Post: MADAWAL. Tq: Gokak. Dist: Belagavi. Pin: 591101</u>		

Bhoni 27/5/22.  
Students Signature with Date

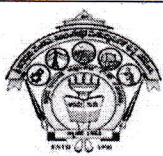
## UNDERTAKING

I the undersigned Mr/Ms. Sacheen Patil.....studying in.....Semester, Mechanical Engineering Branch of Hirasugar Institute of Technology, Nidasoshi, interested to participate in industry Visits of Divgi Industries Private Limited, Banavasi road Sirsi and Rajeev and Company, Belagavi on 04/06/2022. I will obey the respective rules, regulations of the Institute and company and spot instructions given by the concerned authority during the visit without fail. I have undergone Medical checkup and fit to participate in Industry Visit. If anything happens wrong with me during the journey, I only responsible. The institute or the faculty of the institute is not responsible for any kind of damage or accidents or uneven things happen with me. I will not claim any kind of damages from institute. I have taken prior permission from my parents to participate in the above said event.

Name:	<u>Sacheen Patil</u>	USN:	<u>2HN18ME033</u>
Mob. No:	<u>8618654241</u>	Parent Mob. No:	<u>9986817229</u>
Permanent Address:	<u>at: Gokak post: Hebhal tal: HUKKERI Dist: Belagavi KARNATAKA.</u>		

Satli 27/5/22  
Students Signature with Date





S J P N Trust's  
**Hirasugar Institute of Technology, Nidasoshi.**  
*Inculcating Values, Promoting Prosperity*  
 Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi.  
**Accredited at 'A' Grade by NAAC**  
**Programmes Accredited by NBA: CSE, ECE, EEE & ME**

**Mech.Engg.Dept**  
**Industry Visit**  
**STUDENT LIST**  
**2021-22 (EvenSem)**

**Staff & Student List for Industrial Visit @ Divgi Industries Private Limited, Banavasi Road, Sirsi**

**Sem:VIII**

**Total: 49 Students**

R.No	STUDENT NAME	USN	Contact No.	e-mail ID	Sign
1	Aditya Kalbhar	2HN18ME003	9071838805	adi2000km@gmail.com	
2	Akash Bahubali Upadhye	2HN18ME006	9148696516	akashupadhye147@gmail.com	
3	Arun Kolapur	2HN18ME009	9686816387	arunkolapur99@gmail.com	
4	Arun Nagappa Chougule	2HN18ME010	8152838821	Arunchougule0143@gmail.com	
5	Babasabh Bagashahi	2HN18ME011	8310393040	babasabbag@gmail.com	
6	Hanamanth Puji	2HN18ME012	6363129574	pujerihanamant99@gmail.com	
7	Hasansab S Yaragatti	2HN18ME013	9380648988	hasanyaragatti190@gmail.com	
8	Madan Mahantesh Rayar	2HN18ME014	8197904886	madanrayar143@gmail.com	
9	Maibub I Mulla	2HN18ME015	9591718442	maibubmulla2000@gmail.com	
10	Nandish L Vibhuti	2HN18ME018	7204451583	nandishvibhuti87591@gmail.com	
11	Naveenkumar Ganachari	2HN18ME019	8971791429	Kumarnaveen201489@gmail.com	
12	Nikhil Nandigon	2HN18ME020	8884943021	nikhilsnandigon210@gmail.com	
13	Nikhil Shettennavar	2HN18ME021	7996168131	nikhilus131@gmail.com	
14	Prashant Madiwal	2HN18ME024	9611397983	prashantmadi9@gmail.com	
15	Prashant Suresh Kambar	2HN18ME025	8884886809	Prashantkambar59@gmail.com	
16	Praveen S Chougale	2HN18ME026	7019482475	praveenchougale2020@gmail.com	
17	Ravi Magadum	2HN18ME032	9901792724	ravimagadum77@gmail.com	
18	Sacheen Patil	2HN18ME033	8618654241	sacheenpatil587@gmail.com	
19	Satyappa Karoshi	2HN18ME034	7259918470	satyappakaroshi@gmail.com	
20	Shashidhar S Mastiholi	2HN18ME035	9743363321	shashimastiholi@gmail.com	
21	Shivaprasad Ammanagi	2HN18ME036	7022403970	shivaprasadammanagi@gmail.com	
22	Shridhar B. Mudigoud	2HN18ME037	8105443562	shridharmudigoud1198@gmail.com	
23	Siddappa Karagar	2HN18ME038	9380657190	sksiddu121@gmail.com	
24	Sumitra P Shinde	2HN18ME041	8722424397	Sumitrashinde03@gmail.com	
25	Sunil Kuligod	2HN18ME042	7760766220	anilkuligod@gmail.com	
26	Sushant Vijay Magadum	2HN18ME043	8971944492	sushantmagadum6@gmail.com	
27	Vikas Ramachandra Khot	2HN18ME044	7406608507	vikashhot07@gmail.com	
28	Vinayak Ashok Dodamani	2HN18ME045	9108240247	vinayakdd298@gmail.com	
29	Vivekananda C Kambi	2HN18ME048	7406124053	vivekanandack143@gmail.com	
30	Vrushabh A Mugganavar	2HN18ME049	6362788240	vrushabh5530@gmail.com	
31	Akshay Badakundri	2HN19ME400	8152922466	bhadakundriakshay789@gmail.com	
32	Amar Chidanand Sangote	2HN19ME401	9071417721	acsangote@gmail.com	
33	Arun C Tubachi	2HN19ME402	7892906462	aruntubachi1998@gmail.com	
34	Devendra Chougule	2HN19ME404	9986259617	bharatesh121@gmail.com	
35	Dundanagouda Patil	2HN19ME405	7795947407	patildundangouda@gmail.com	
36	Mahantesh G Hiremath	2HN19ME407	7026797668	mahantesh20gh@gmail.com	
37	Shravan S Kurani	2HN19ME409	9611098640	Shravankurani8640@gmail.com	
38	Vijayalaxmi B Bugadi	2HN19ME412	9591160930	vijayalaxmibugadi@gmail.com	
39	Akshay Boragalli	2HN19ME413	8748086016	boragalliakshay@gmail.com	
40	Sourabh Mole	2HN19ME411	8749021245	Sourabhmole1232@gmail.com	
41	Vinod Soorannavar	2HN18ME046	7406010278	Vinodsoorannavar6841@gmail.com	
42	Rahul Mudalagi	2HN18ME028	9902731051	rahulmudalagi@gmail.com	
43	Arun Kumar S. Hologatti	2HN19ME403	7019370722	arunhologatti1999@gmail.com	

**Staff Members**

01. Dr. M.M. Shivashimpi
02. Prof. M.S. Futane
03. Prof. M.A. Hipparagi



Nidasoshi-591 236, Taq: Hukkeri, Dist: Belagavi, Karnataka, India.  
 Phone: +91-8333-278887, Fax: 278886, Web: www.hsit.ac.in, E-mail: principal@hsit.ac.in

**Mechanical Engg.**  
**HIT, Nidasoshi**

HOD 28/05/2022





S J P N Trust's  
**Hirasugar Institute of Technology, Nidasoshi.**  
*Inculcating Values, Promoting Prosperity*  
 Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi.  
**Accredited at 'A' Grade by NAAC**  
**Programmes Accredited by NBA: CSE, ECE, EEE & ME**

**Mech.Engg.Dept**

**Industrial Visit**

**Physical Fitness  
Certificate**

**2021-22 (Even Sem)**

## Physical Fitness Certificate

**This is certified that, the following students are physical fit to attend the industry visit at Divgi Industries Private Limited, Banavasi Road, Sirsi on 4<sup>th</sup> June 2022.**

**Sem:VIII**

R.No	STUDENT NAME	USN	Contact No.	e-mail ID
1	Aditya Kalbhar	2HN18ME003	9071838805	adi2000km@gmail.com
2	Akash Bahubali Upadhye	2HN18ME006	9148696516	akashupadhye147@gmail.com
3	Arun Kolapur	2HN18ME009	9686816387	arunkolapur99@gmail.com
4	Arun Nagappa Chougule	2HN18ME010	8152838821	Arunchougule0143@gmail.com
5	Babasabh Bagashahi	2HN18ME011	8310393040	babasabbag@gmail.com
6	Hanamanth Puji	2HN18ME012	6363129574	pujerihanamant99@gmail.com
7	Hasansab S Yaragatti	2HN18ME013	9380648988	hasanyaragatti190@gmail.com
8	Madan Mahantesh Rayar	2HN18ME014	8197904886	madanrayar143@gmail.com
9	Maibub I Mulla	2HN18ME015	9591718442	maibubmulla2000@gmail.com
10	Nandish L Vibhuti	2HN18ME018	7204451583	nandishvibhuti87591@gmail.com
11	Naveenkumar Ganachari	2HN18ME019	8971791429	Kumarnaveen201489@gmail.com
12	Nikhil Nandigon	2HN18ME020	8884943021	nikhilnandigon210@gmail.com
13	Nikhil Shettnavar	2HN18ME021	7996168131	nikhilus131@gmail.com
14	Prashant Madiwalar	2HN18ME024	9611397983	prashantmadi9@gmail.com
15	Prashant Suresh Kambar	2HN18ME025	8884886809	Prashantkambar59@gmail.com
16	Praveen S Chougale	2HN18ME026	7019482475	praveenchougale2020@gmail.com
17	Ravi Magadum	2HN18ME032	9901792724	ravimagadum77@gmail.com
18	Sacheen Patil	2HN18ME033	8618654241	sacheenpatil587@gmail.com
19	Satyappa Karoshi	2HN18ME034	7259918470	satyappakaroshi@gmail.com
20	Shashidhar S Mastiholi	2HN18ME035	9743363321	shashimastiholi@gmail.com
21	Shivaprasad Ammanagi	2HN18ME036	7022403970	shivaprasadammanagi@gmail.com
22	Shridhar B.Mudigoud	2HN18ME037	8105443562	shridharmudigoud1198@gmail.com
23	Siddappa Karagar	2HN18ME038	9380657190	sksiddu121@gmail.com
24	Sumitra P Shinde	2HN18ME041	8722424397	Sumitrashinde03@gmail.com
25	Sunil Kuligod	2HN18ME042	7760766220	anilkuligod@gmail.com
26	Sushant Vijay Magadum	2HN18ME043	8971944492	sushantmagadum6@gmail.com
27	Vikas Ramachandra Khot	2HN18ME044	7406608507	vikashkhot07@gmail.com
28	Vinayak Ashok Dodamani	2HN18ME045	9108240247	vinayakdd298@gmail.com
29	Vivekananda C Kambi	2HN18ME048	7406124053	vivekanandack143@gmail.com
30	Vrushabh A Mugganavar	2HN18ME049	6362788240	vrushabh5530@gmail.com
31	Akshay Badakundri	2HN19ME400	8152922466	bhadakundriakshay789@gmail.com
32	Amar Chidanand Sangote	2HN19ME401	9071417721	acsangote@gmail.com
33	Arun C Tubachi	2HN19ME402	7892906462	aruntubachi1998@gmail.com
34	Devendra Chougule	2HN19ME404	9986259617	bharatesh121@gmail.com
35	Dundanagouda Patil	2HN19ME405	7795947407	patildundangouda@gmail.com
36	Mahantesh G Hiremath	2HN19ME407	7026797668	mahantesh20gh@gmail.com
37	Shravan S Kurani	2HN19ME409	9611098640	Shravankurani8640@gmail.com
38	Vijayalaxmi B Bugadi	2HN19ME412	9591160930	vijayalaxmibugadi@gmail.com
39	Akshay Boragalli	2HN19ME413	8748086016	boragalliakshay@gmail.com
40	Sourabh mole	2HN19ME411	8749021245	Sourabhmore232@gmail.com
41	Vinod Sootannavar	2HN18ME406	74060278	vinodsootannavar654@gmail.com
42	Rahul Mudalgi	2HN18ME028	990273081	rahulmudalgi@gmail.com
43	Arun Kumar S. Kalogatti	2HN19ME403	8019380722	arunkalogatti1999@gmail.com

Nidasoshi-591 236, Taq: Hukkeri, Dist: Belagavi, Karnataka, India.

Phone: +91-8333-278887, Fax: 278886, Web: www.hsit.ac.in, E-mail: principal@hsit.ac.in

*M. O.*  
*S.J.P.N. Trust's Dispensary*  
*Nidasoshi*





S J P N Trust's  
**Hirasugar Institute of Technology, Nidasoshi**  
*Inculcating Values, Promoting Prosperity*  
Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi.  
**Accredited at 'A' Grade by NAAC**  
**Programmes Accredited by NBA: CSE, ECE, EEE & ME.**

Mech. Engg. Dept.

Academic

Industry Visit  
Report

AY:2021-22

# Report on Industry Visit to Divgi Industries Private Limited, Sirsi

Date: 4<sup>th</sup> June 2022



Student Co-ordinators:

1. Mr. Nandish L Vibhuti
2. Miss. Sumitra P Shinde

Staff Co-ordinators:

1. Dr. M.M.Shivashimpi
2. Prof. M.A.Hipparagi
3. Prof. M.S.Futane

Dr. S. N. Topannavar

HOD  
Mechanical Engg.  
HIT, Nidasoshi





**S J P N Trust's**  
**Hirasugar Institute of Technology, Nidasoshi**  
*Inculcating Values, Promoting Prosperity*  
Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi.  
**Accredited at 'A' Grade by NAAC**  
**Programmes Accredited by NBA: CSE, ECE, EEE & ME.**

**Mech. Engg. Dept.**

**Academic**

**Industry Visit  
Report**

**AY:2021-22**

## **CONTENTS**

<b>Sl. No</b>	<b>TOPIC</b>	<b>Page. No.</b>
<b>1</b>	<b>Divgi Torq Transfer Systems</b>	<b>1</b>
<b>2</b>	<b>Vison &amp; Mission</b>	<b>2</b>
<b>3</b>	<b>The Details of the Industry Visit</b>	<b>3</b>
<b>4</b>	<b>Product Engineering</b>	<b>4</b>
<b>5</b>	<b>Manufacturing Operations</b>	<b>6</b>
<b>6</b>	<b>Conclusions</b>	<b>7</b>
<b>7</b>	<b>Industry Visit Photo Gallery</b>	<b>8</b>

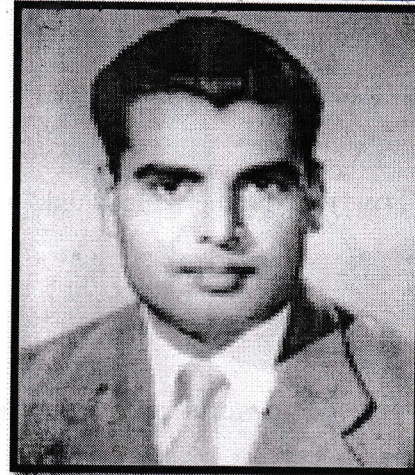




## 1. Divgi Torq Transfer Systems:



**Founder: Mr. Ramrao 'RN' Divgi**



**Founder: Mr. Bhaskar 'BN' Divgi**

Divgi Metalwares Pvt. Ltd. (DMPL) was born in 1964 as a small scale manufacturing enterprise manufacturing of gears and screw machined parts under the leaderships of Ramrao, 'RN', Divgi's and brother Bhaskar (BN). As a joint venture with BorgWarner, USA between 1995 and 2016, the company gained speciality in the manufacture of specialized and highly engineered solutions for 4WD/ AWD vehicles. In 2016, the JV with BorgWarner was dissolved and Divgi TorqTransfer Systems formed as a fully Indian entity. Transmissions – manual, automatic and electric – were introduced into its products portfolio for utility vehicles, agriculture, commercial, industrial and construction equipment. Divgi-TTS currently has three facilities at Bhosari in Pune, Shivare in Pune Taluka and Sirsi, Karnataka. A greenfield site is under construction at Shirval, Satara Dist., Maharashtra. Divgi-TTS has an enviable customer base across the globe. These include Tata Motors, Mahindra and Mahindra, Ford, Toyota and Nissan and customers in Japan, Korea, China, Thailand, UK, and the USA.

Divgi Torq Transfer Systems in Sirsibanavasi Road, Sirsi is known to satisfactorily cater to the demands of its customer base. It stands located at Sirsibanavasi Road-581402. It has earned 50 reviews and aspires to develop a loyal customer base. The business strives to make for a positive experience through its offerings. Customer centricity is at the core of Divgi Torqtransfer Systems in Sirsibanavasi Road, Sirsi and it is this belief that has led the business to build long-term relationships. Ensuring a positive customer experience, making available





goods and/or services that are of top-notch quality is given prime importance. India's leading B2B market place, Jd Mart ensures engaging in business activities is a seamless process for small and medium enterprises as well as large businesses. In a wake to enable these businesses to reach their audience, this portal lets them showcase their offerings in terms of the products and/or services through a digital catalogue. This business has a wide range of product offerings and the product/catalogue list includes Automotive Transmission Part etc.

## 2. Vision & Mission

### 2.1 Vision:


To be recognized as a world-class Indian brand in automotive drivetrain components and systems.

### 2.2 Mission:

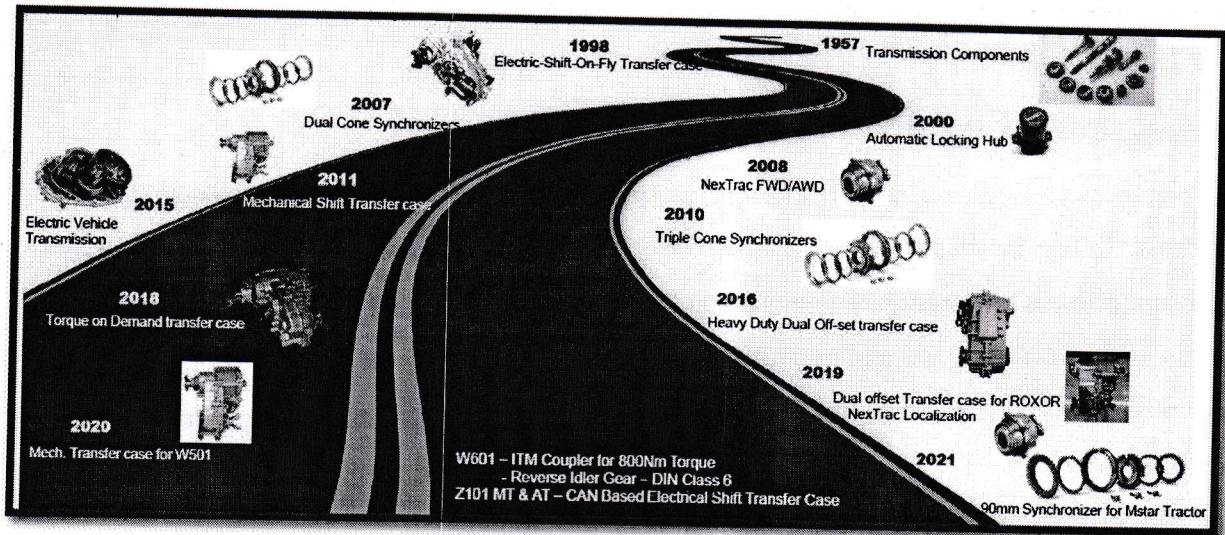
To help our customers and our people continually innovate and excel in building world-class drive train components and systems.

Founders	Ramrao 'RN' Divgi , Bhaskar 'BN' Divgi
Year of Institution	<ul style="list-style-type: none"><li>• 1964 - Divgi Metalwares Pvt. Ltd. – DMPL</li><li>• 1995 - Divgi Warner Pvt. Ltd. (JV with Borg Warner, USA)</li><li>• 2016 - Divgi TorqTransfer Systems – Divgi-TTS</li></ul>
Plant Locations	<ul style="list-style-type: none"><li>• Bhosari, Pune</li><li>• Shivare, Pune Dist. Maharashtra</li><li>• Sirsi, Karnataka</li><li>• Shirval, Satara Dist. Maharashtra</li></ul>
Current Workforce	500+
Products Range	<ul style="list-style-type: none"><li>• Specialized and highly engineered solutions for 4WD/ AWD vehicles</li><li>• Manual Transmissions, Dual Clutch Transmissions and Electric Vehicle Transmissions</li><li>• Synchronizers for transmissions</li><li>• Components for the above products</li></ul>
Capabilities	Products design & development, application engineering, manufacturing, supply and after-sales support
Segment Presence	Utility Vehicles, Electric Vehicles, Passenger Vehicles, Agriculture, Commercial, Industrial and Construction Equipment



	<b>S J P N Trust's</b> <b>Hirasugar Institute of Technology, Nidasoshi</b> <i>Inculcating Values, Promoting Prosperity</i> Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi. <b>Accredited at 'A' Grade by NAAC</b> <b>Programmes Accredited by NBA: CSE, ECE, EEE &amp; ME.</b>	
	<b>Mech.Engg. Dept.</b>	
	<b>Academic</b>	
	<b>Industry Visit Report</b> <b>AY:2021-22</b>	
Customer Base	Global - India, UK, Russia, Korea, China, Thailand, USA	

### 2.3 Milestones:




### 3. The Details of the Industrial Visit:

The Department of Mechanical Engineering, HSIT college of engineering organized a one day

Industrial Visit to “DIVGI TORQ TRANSFER SYSTEMS”, SIRSI on 4<sup>th</sup> June 2022 for Final year students. The visit was organized with the prior permission and guidance of Dr. M. M. Shivashimpi, Prof. M.A. Hipparagi and Prof. M.S. Futane. A total of 41 students along with 3 faculty members have joined the visit.

- We Reached Rajeev and Company at 9.30 am on 4<sup>th</sup> June 2022
- At 10 am .We are welcomed by the Mr. Ashwin Kathare, from DIVGI TORQ TRANSFER SYETEM. He gave instructions before visiting the company. He also had given oral explanation about the company overview. Which makes the students to know about the company and also he explained what kind of materials are used by them, and what are the process will they will do during manufacturing the valves.
- At 10 am. we visited DIVGI TORQ TRANSFER SYSTEMS Where we got information about the following technology:
- Showed all the machines which are used to manufacture the Gears.



	<b>S J P N Trust's</b> <b>Hirasugar Institute of Technology, Nidasoshi</b> <i>Inculcating Values, Promoting Prosperity</i> Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi. <b>Accredited at 'A' Grade by NAAC</b> <b>Programmes Accredited by NBA: CSE, ECE, EEE &amp; ME.</b>	
	<b>Mech. Engg. Dept.</b>	
	<b>Academic</b>	
	<b>Industry Visit Report</b> <b>AY:2021-22</b>	

- At 10.30 am. We visited the shop floor with the engineer Mr .Ashwin Kathare. At each layout we got about the explanation of the each part which is to be installed in the company.
- Finally at the end of the session at 11.50 am. Our faculty Dr. M. M.Shivashimpi on behalf of HSIT college of Engineering, has given a vote of thanks for the Rajeev and Company, for giving a great opportunity to visit the plant.

#### 4. Product Engineering

The Products Engineering Department, a team of 23 graduates and post graduates from premier Indian institutes with an average of 15 years of experience in the automotive design domain possess a thorough understanding of the technological and mechanical aspects of the entire drive train of a vehicle and its impact on vehicle performance. This knowledge, coupled with a deep knowledge of the technologies and dynamics of its products, vehicle architectures – Rear-Wheel Drive and Front-Wheel Drive – and application of the technology to suit customer's specific requirements lays the foundation for the robust design and development of state-of-the-art solutions that form part of Divgi-TTS' stable of products.

A systematic development approach involves

1. Concept layout / Designing
2. System layout
3. Concept definition
4. Design engineering
5. Analysis of functionality
6. Optimization of existing systems
7. Value engineering
8. DFMEA
9. DFM / DFA

##### 4.1 Tools

The designing is undertaken through systematic steps involving Modelling, Simulation, Stack Analysis, Verification and Validation of the product under design through design intent & process intent sample parts. Several design development tools are employed for modelling, simulating and validating the design parameters as per the precise specifications required by the customer. Some of the engineering software's employed are:





## 4.2 CAD Software Packages: NX 12.0

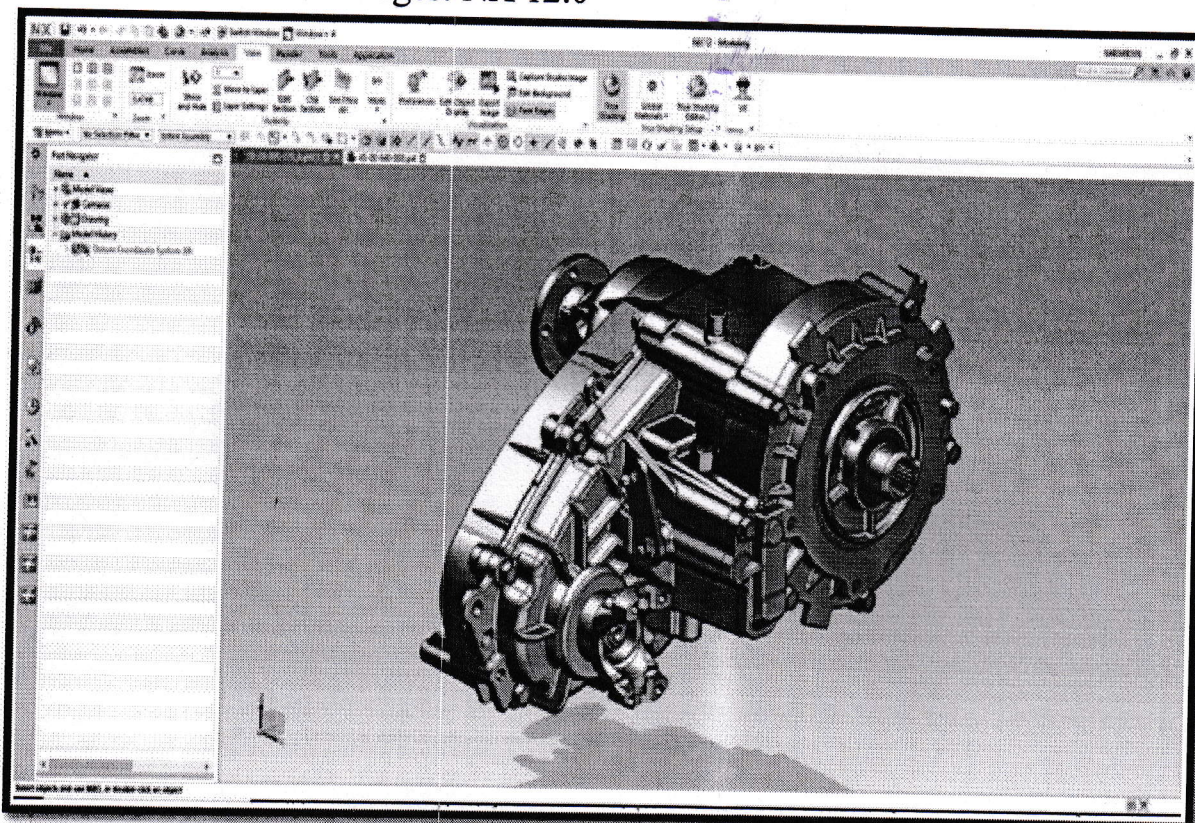


Figure 4.1: NX Modelling

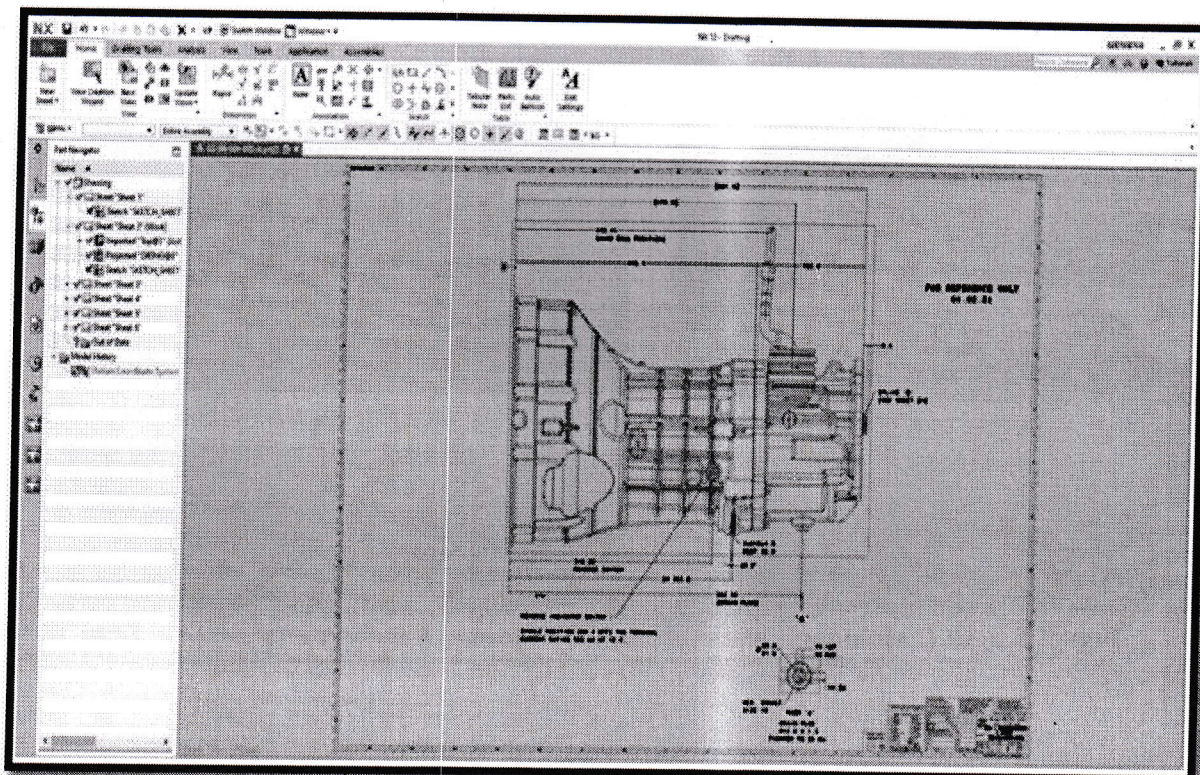


Figure 4.2: NX Drafting





## 5. Manufacturing Operations

### 5.1 Shaping



Figure 5.1 CLC-200 SZ

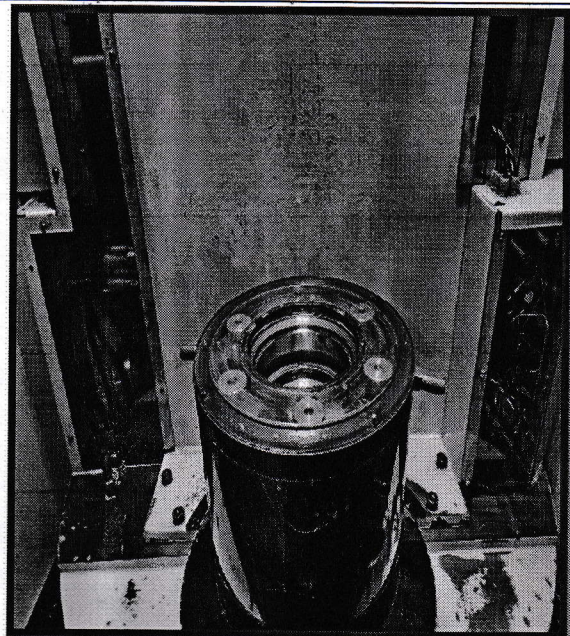


Figure 5.2 CLC 100SZ

### 5.2 Hobbing

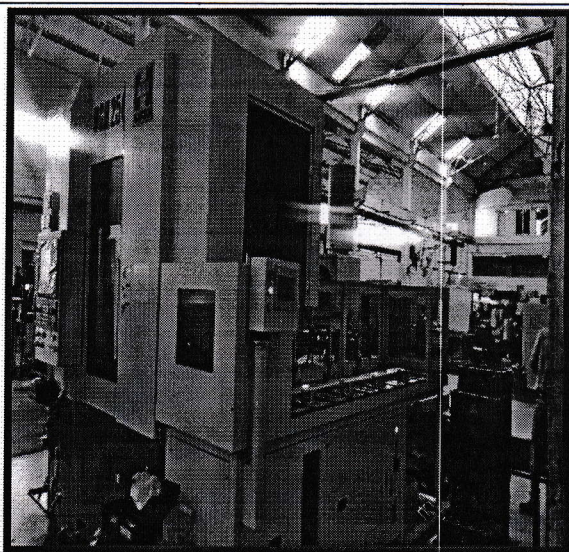


Figure 5.3 CLC Multirun

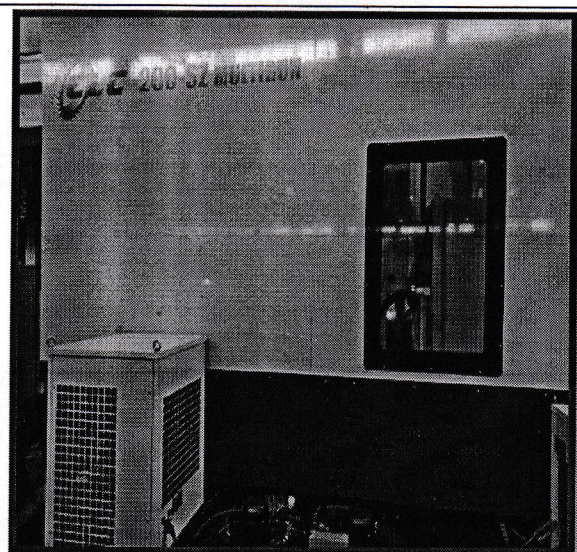


Figure 5.4 HOTA HGH250





### 5.3 Grinding

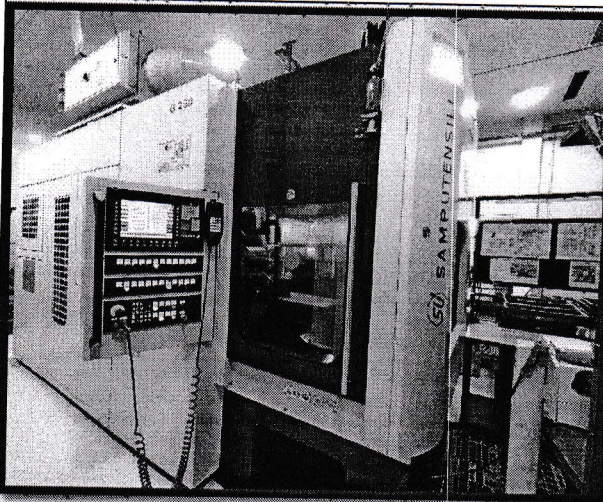


Figure 5.5 Samputensili G250

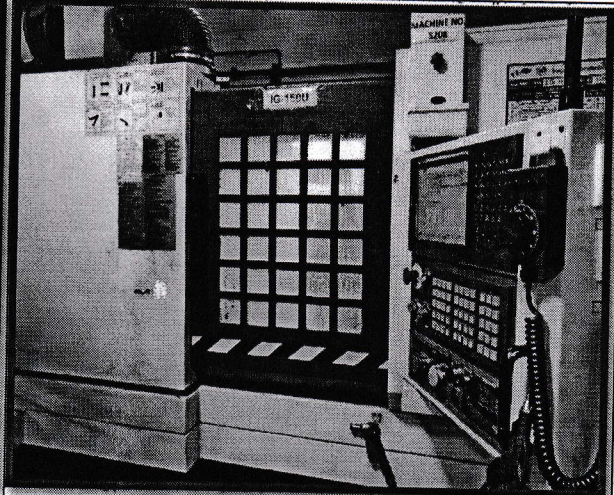


Figure 5.6 Micromatic IG150U

### 5.4 Honing and Spline Rolling

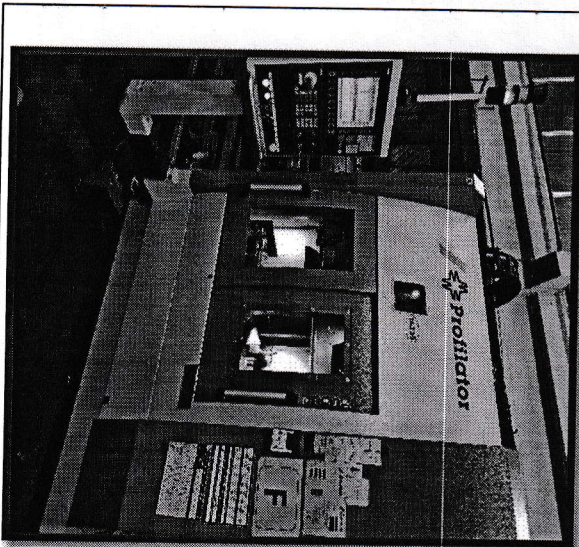


Figure 5.7 Fassler/D250

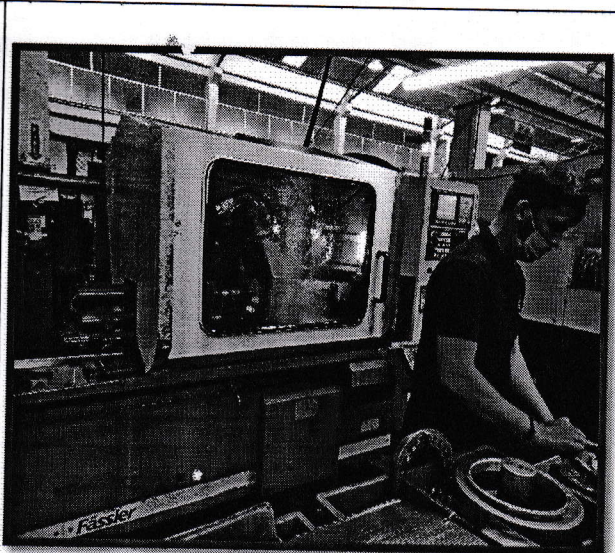


Figure 5.8 Escofier

## 6. Conclusions

Industrialisation is the period of social and economy change that transforms a human group from an agrarian society into an industrial one. The role industry helps to improve economic devolvemnt; it overcomes the agriculture by industrial development. Industry performance is measures by industry profitability and social welfare






## 7. Industry Visit Photo Gallery



The staff and Students attended Industry Visit at Divgi Industries Private Limited, Sirsi held on 4<sup>th</sup> June 2022



	S J P N Trust's <b>Hirasugar Institute of Technology, Nidasoshi</b> <i>Inculcating Values, Promoting Prosperity</i> Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi. Accredited at 'A' Grade by NAAC Programmes Accredited by NBA: CSE, ECE, EEE & ME		Mech. Engg. Dept
			Activities
			Feedback
			2021-22 (Even)

### FEEDBACK

Title of the Activity: **Industrial Visit to "Divgi Industries Private Limited , Sirsi"**

Gap No.: 14	Mapped POs	POs Weightage	Mapped PSOs	PSOs Weightage
	1,2,3,4,6,7,8,10,11 & 12	3,3,3,3,3,3,3,3,3,3 & 3	1,2 & 3	3,3 & 3

Date/Duration: 04-06-2022

Place: Sirsi


Note: Solicit your response in numeric (10 points:Excellent-0 point: Not Good)

S.No.	Parameter	Numeric Response (0-10)
1	Concept realization and skills observed during industry visit.	10
2	Inspired to build and lead the better career after the graduation.	10
3	Rate the industry in the professional learning prospective.	10
4	Your development/+ve change during the industry visit.	10
5	Overall motivation and inspiration received during the industry visit.	10
Total points		50

Write your comments on activity/event organization (All Arrangements such as Hospitality, Logistics, and Hall etc.):

Signature of the Participant

Nidasoshi, Taq: Hukkeri, Dist: Belgaum, Karnataka - 591 236  
Phone:+91-8333-278887, Fax:278886, Web:[www.hsit.ac.in](http://www.hsit.ac.in)Mail:[principal@hsit.ac.in](mailto:principal@hsit.ac.in)

	S J P N Trust's <b>Hirasugar Institute of Technology, Nidasoshi</b> <i>Inculcating Values, Promoting Prosperity</i> Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi. Accredited at 'A' Grade by NAAC Programmes Accredited by NBA: CSE, ECE, EEE & ME		Mech. Engg. Dept
			Activities
			Feedback
			2021-22 (Even)

### FEEDBACK

Title of the Activity: **Industrial Visit to "Divgi Industries Private Limited , Sirsi"**

Gap No.:14	Mapped POs	POs Weightage	Mapped PSOs	PSOs Weightage
	1,2,3,4,6,7,8,10,11 & 12	3,3,3,3,3,3,3,3,3,3 & 3	1,2 & 3	3,3 & 3

Date/Duration: 04-06-2022

Venue: Sirsi

Note: Solicit your response in numeric (10 points:Excellent-0 point: Not Good)

S.No.	Parameter	Numeric Response (0-10)
1	Concept realization and skills observed during industry visit.	10
2	Inspired to build and lead the better career after the graduation.	10
3	Rate the industry in the professional learning prospective.	10
4	Your development/+ve change during the industry visit.	10
5	Overall motivation and inspiration received during the industry visit.	10
Total points		50

Write your comments on activity/event organization (All Arrangements such as Hospitality, Logistics, and Hall etc.):

Signature of the Participant

Nidasoshi, Taq: Hukkeri, Dist: Belgaum, Karnataka - 591 236  
Phone:+91-8333-278887, Fax:278886, Web:[www.hsit.ac.in](http://www.hsit.ac.in)Mail:[principal@hsit.ac.in](mailto:principal@hsit.ac.in)





**S J P N Trust's**  
**Hirasugar Institute of Technology, Nidasoshi**  
 Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi.  
 Accredited at 'A' Grade by NAAC  
 Programmes Accredited by NBA: CSE, ECE, EEE & ME.

<b>Mech. Engg. Dept.</b>
<b>Activities</b>
<b>Impact Analysis on Feedback</b>
<b>AY:2021-22</b>

### Impact Analysis and PO & PSO Attainment

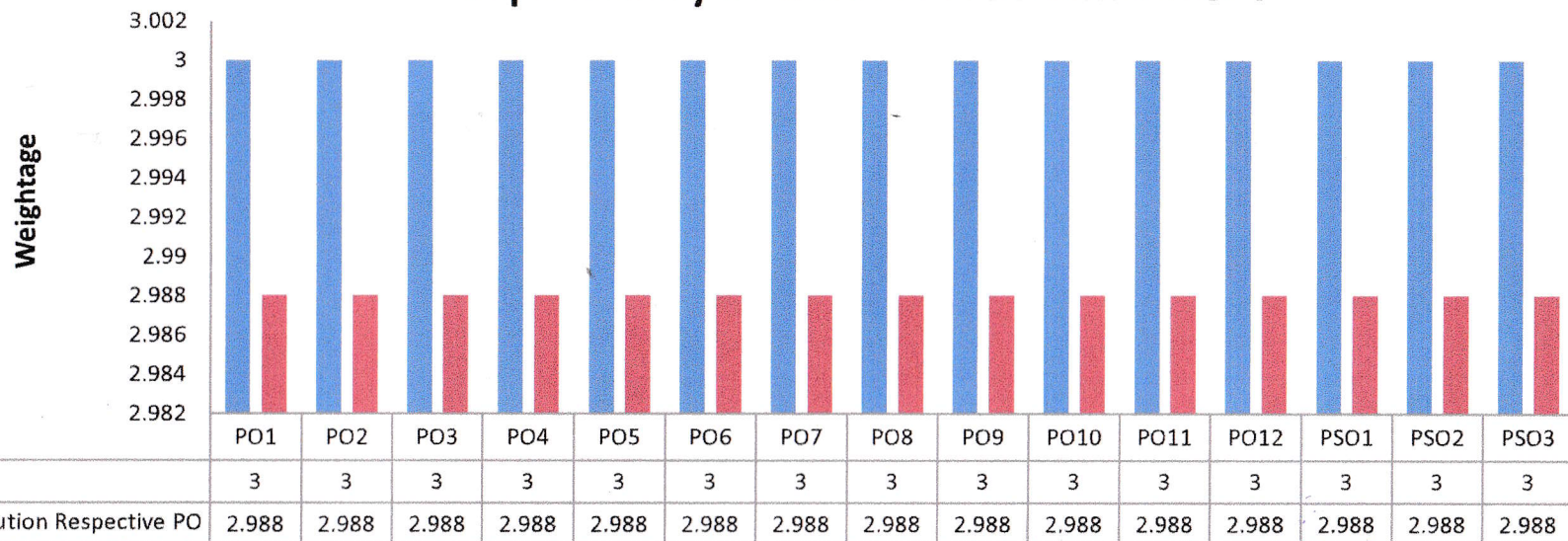
<b>Activity Name:</b>	Industry Visit at Divgi Industries Private Limited, Sirsi	<b>No. of Respondents (N):</b>	38
<b>Grand Total Points are given by all respondents (T):</b>	1893	<b>Impact Coefficient (IC=0-1):</b>	Here, $IC = T / (N * 50) = 1893 / (38 * 50) = 0.996$

Mapped PO/s	Weightage Assigned (1/2/3)	PO Attained/Activity Contribution to the respective PO (IC*Weightage Assigned)	Mapped PSO/s	Weightage Assigned (1/2/3)	PO Attained/Activity Contribution to the respective PSO (IC*Weightage Assigned)
PO1	3	2.988	PSO1	3	2.988
PO2	3	2.988	PSO2	3	2.988
PO3	3	2.988	PSO3	3	2.988
PO4	3	2.988			
PO5	3	2.988			
PO6	3	2.988			
PO7	3	2.988			
PO8	3	2.988			
PO9	3	2.988			
PO10	3	2.988			
PO11	3	2.988			
PO12	3	2.988			





### Impact Analysis and PO & PSO Attainment



#### Justification:

##### 1. Justification for Mapping of POs & PSOs

Mapped POs/ PSOs	Weightage	Justification
PO1	3	This activity substantially addresses the design and construction of the gear pair employed, gears can change the direction of movement and/or increase the output speed or torque.
PO2	3	This activity substantially enlightens analyzing the stress generated in meshing gear teeth through finite element analysis. The first is to apply the concentrated load at the load position directly. Then, the bending stress of the gear can be calculated.
PO3	3	This activity substantially The tooth size of gears is established by the diametrical pitch. The design accommodates mostly rolling, rather than sliding, contact of the tooth surfaces, and tooth contact occurs along a line parallel to the axis.
PO4	3	This activity substantially Gears can be manufactured by a variety of processes, including casting,





**S J P N Trust's**  
**Hirasugar Institute of Technology, Nidasoshi**  
 Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi.  
 Accredited at 'A' Grade by NAAC  
 Programmes Accredited by NBA: CSE, ECE, EEE & ME.

**Mech. Engg. Dept.**

**Activities**

**Impact Analysis on Feedback**

**AY:2021-22**

		forging, extrusion, powder metallurgy, and blanking. As a general rule, however, machining is applied to achieve the final dimensions, shape, and surface finish in the gear. Broaching is the fastest method of machining gears and is performed using a multi-tooth cutting tool called a broach.
PO5	3	This activity substantially addresses G and M codes used to write the program to adapt CNC machines. The CNC gear hobbing machines can cut spur gears, splines, helical gears, and double helical gears.
PO6	3	This activity addresses briefly there would be no automobiles, no public transportation, and no power, and countries throughout the world would be unable to maintain complex road systems.
PO7	3	This activity addresses briefly CNC machining is used in the manufacturing of gears with extreme precision and accuracy. This process is usually done by an experienced machinist. Gear machining is used to manufacture several products, including internal gears, worm gears, sprockets, spur, and helical gears.
PO8	3	This activity addresses concerns and issues that arise during the design of technological products, processes, systems, and services. This includes issues such as safety, sustainability, user autonomy, and privacy.
PO9	3	This activity addresses teamwork and Kaizan – constant & continuous improvement in gear manufacturing.
PO10	3	This activity enlightens understanding of gear accuracy refers to the comprehensive error of gear shape, including some important parameters such as tooth shape, tooth direction, radial jump, etc.
PO11	3	This activity provides knowledge about the applicability of the developed manufacturing cost model to serve as a backbone of a decision-making support system for the adoption of new technologies
PO12	3	This activity enlightens The spur gear is the most common type of gear and has multiple applications in power plants, aerospace components, industrial machines, and much more. Straight teeth are the simplest to manufacture and sustain high speeds and high loads.
PSO1	3	This activity provides gears are machine elements that convert and transmit torque from motors and engines to industrial equipment at useful rotational speeds.
PSO2	3	This activity addresses the knowledge of gear wheels are an essential part of almost every piece of machinery that runs on motive power, and societal progress is underpinned by the engineering found in every single gear wheel.
PSO3	3	This activity enlightens about the continuous generating process using a multipoint tool that eliminates issues such as the spacing error known as drop tooth. “There are no idle strokes on the machine tool, as with the gear shaping process.





**S J P N Trust's**  
**Hirasugar Institute of Technology, Nidasoshi**  
Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi.  
Accredited at 'A' Grade by NAAC  
Programmes Accredited by NBA: CSE, ECE, EEE & ME.

**Mech. Engg. Dept.**

**Activities**

**Impact Analysis on Feedback**

**AY:2021-22**

2. The activity mapped with PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, and PO11 & PO12 was found satisfactory with an attainment level of 2.988 each against the Mapped values during the impact analysis.
3. The activity mapped with PSO1, PSO2 & PSO3 was found satisfactory with an attainment level of 2.988 each against the Mapped value during the impact analysis.

**Conclusion:** The activity is organized to fulfill the program outcomes engineering knowledge, problem analysis, design/development solution, conduct investigations of complex problems, modern tool usage, engineer and society, environment and sustainability, ethics, individual & teamwork, communication, project management & finance and lifelong learning and PSO1, PSO2 & PSO3 has mitigated the gap identified satisfactorily to some extent.

**Future Suggestions:** Conducting such events will provide knowledge of gear manufacturing, material selection, different types of tools used in gear manufacturing, and standardization.

Mr. Vivekanand Kambi  
AIMSS Secretary

Prof. M.M. Shivashimpi & Prof. D.N. Inamdar  
AIMSS-Coordinator/s

Dr. S.N. Topannavar

**HOD**  
**Mechanical Engg.**  
**HIT, Nidasoshi**