



## **MECHANICAL ENGINEERING DEPARTMENT**

### **A Report on one day Industrial Visit to “JAY METAL TECH”**

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#### **ABOUT FACTORY**

Jay Metal Tech is established in the year 2001, and is ISO 9001 certified organization engaged in manufacturing and supplying Industrial Valves and Castings. Comprehensive range includes products like Propeller Shaft Casting, Pump Casting, Railway Pin Insulator and Sluice Valve and also offers a wide range of Butterfly Valve, Check Valve, Clutch Pressure Plate and Propeller Shaft Casting. Their range is manufactured using high grade material like stainless steel, carbon & alloy steel, cast iron, ductile (S.G.) iron, nonferrous metal and others.

JMT's value for money range is manufactured at company's state-of-the-art manufacturing unit using sophisticated machines. JMT specialize in manufacturing ductile iron and gray iron casting in weight ranging from 300 grams to 5000 kilograms. Their range is manufactured using heat treatment, surface treatment and machining process, which makes it ready to assemble. The Power Grid Corporation of India – PGCIL has approved JMT as the supplier of SG Iron castings to various insulators manufacturing industries. It is testimonial to the high standards castings manufactured by them. JMT is backed by a team of after sales personnel, which maintains healthy business relations with our clients, enabling us to understand their specific requirements. Owing to all these factors, they are able to garner clients all over India.

Under the guidance of mentor, Mr. Jayesh Wankawala, JMT is able to offer their valuable clients, a range that is appreciated for its quality, durability and longer service life.

#### **OBJECTIVES OF THE VISIT**

Mechanical Engineering Department of S.N.P.I.T. & R.C., UmraKh arranged an industrial visit to Jay Metal Tech Surat, Gujarat, India on 13<sup>th</sup> October 2022 with 47 students of 3<sup>rd</sup> year Mechanical Engineering. The purpose of the visit was to enhance industrial exposure of the students, get practical knowledge of manufacturing procedure of various products made by casting processes and related with other advanced machineries. The team of two faculty coordinators Prof. Hitesh Tailor and Prof. Akash Vyas took part in prestigious industrial visit.



## **MECHANICAL ENGINEERING DEPARTMENT**

### **INDUSTRY DETAIL**

- 1. Name Of Industry:-** Jay Metal Tech
- 2. Address :-** Block No. A/15, Plot No. 6 / 7 / 8, Road No. 8, Udhyanagar, Udhna. Surat, Gujarat - 394 210, India
- 3. Date Of Visit:-** 13 /10/2022
- 4. Year / Semester:-** 3rd Year/5th Sem
- 5. No. of Students:-** 47
- 6. No. of Faculties:-** 2

### **ACTIVITIES AND OUTCOME OF THE VISIT**

#### **VISIT INSIGHT**

With the use of sophisticated machinery, JMT is able to provide a range that is efficiently catering to the demands of their clients. JMT undertake different processes for the production of their range. All these processes are an integral part of manufacturing and are undertaken by experienced workforce.

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

#### **MELTING**

- Induction Furnaces - 2 Panels (Dual as well as Mono Track) with 4 Crucibles
- Melting capacity 40 tons per day liquid metal aggregating 10,000 Tons Castings per annum

#### **SAND PROCESSING**

- Green Sand conditioning plants with a capacity of 300 M. T. of processed molding sand per day
- Fluidized bed & rotary drum type sand cooling system equipped with pollution control equipment
- Silicate Sand mixtures with Auto Binder Addition Pumps with sand attrition & reclamation plant equipped with pollution control equipment

#### **MOLDING**

- Molding line equipped with ARPA 450 & ARPA 300 equivalent simultaneous jolt squeeze



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molding machines.

- Molding Capacity of 3000 per day, supported by hydraulically operated mold handling system
- Hand molding facility up to 3.0 \* 3.0 meters
- Box size by silicate and chemically bonded sand process

### **CORE MAKING**

- Vertical & Horizontal parting shell core shooter machines
- Sand mixtures with Auto Binder Addition Pumps for CO<sub>2</sub> & Single part no-bake cores

### **COMPONENT DRESSING AND FINISHING**

- Chain of fully automatic shot blasting machines equipped with dust collection units
- Full line of swing frame, pedestal, bench and pencil grinders

### **HEAT TREATMENT**

- Oil fired bell type furnace of 2 tons per batch capacity
- With auto temperature controller
- With 3 pen graph plotter suitable for stress relieving, annealing, normalizing, tempering, heat treatment process

### **MACHINING**

- Set of conventional and CNC machines suitable for various type of jobs (Out sourced)

### **SURFACE TREATMENT**

- Crucible type fully equipped gas fired & electric hot dip galvanizing plant (Out sourced)
- Trolley type diesel fired oven and booth type powder coating facility

### **PATTERN MAKING**

Fully fledged pattern development facility with experienced team As scheduled, the visit team reached Jay Metal Tech Surat at 10:00 am warm welcome was received from company representatives and they gave us the brief idea about their work culture, vision & Mission then Technology description by HR member and team was imparted to us.



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Below is the Technology learning from the industrial visit at Jay Metal Tech Surat which will impart roots of knowledge in our students of Bachelors of Engineering

### **APPRECIATION**

The students got the opportunity to learn about different products and process which undergoes the subject Manufacturing Process II. In addition, Machine learning was given by their officials at every corner of their plant. We S.N.P.I.T. & R.C. Mechanical Engineering department team are really thankful to the Jay Metal Tech Surat and their team.

### **Report prepared by,**

Prof. Akash Vyas

(Mechanical Eng. Dept.)



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**PARTICIPANT DETAILS: ANNEXURE – I**

**VISIT SCHEDULE: ANNEXURE II**

**VISIT PHOTOGRAPHS: ANNEXURE III**



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 UMRAKH**

Vidyabharti Campus, At & Po Baben, Ta: Bardoli, Dist: Surat, Gujarat, India,  
 SEM: 5 Department : MECHANICAL ENGINEERING  
 INDUSTRIAL VISIT AT JMT CASTING (13/10/2022)

SR NO	ENROLL NO.	NAME	SIGN
1	190490119005	CHAUDHARI AMITKUMAR BABUBHAI	
2	200490119001	SHREYAS M CHAUDHARI	
3	200490119002	BHAGARIYA RAHUL MADHUBHAI	
4	200490119004	MATHUKIYA PRATIK KAILASHBHAI	
5	200490119005	CHAUDHARI PRIYANSHUBHAI DHANSUKHBHAI	
6	200490119006	TANDEL AKASH KANUBHAI	
7	200490119007	GUPTA VINAYKUMAR MATABADAL	
8	200490119008	GAMIT AYUBBHAI DILIPBHAI	
9	200490119009	CHAUDHARI ANGELKUMAR VINAYBHAI	
10	200490119010	CHAUDHARI YUSUFKUMAR ARJUNBHAI	
11	200490119011	PARMAR DHAVAL KANTIBHAI	
12	200490119012	TAILOR PARTHKUMAR DHARMESHBHAI	
13	200490119013	ASHISH A. CHAUDHARI	
14	200490119014	GEDIYA OM AJITBHAI	
15	200490119015	MAHLA ANKITBHAI DHIRUBHAI	
16	200490119016	PADVI ANIRUDDH NARESHBHAI	
17	200490119017	NAYKA BHAVINKUMAR GIRISHBHAI	
18	200490119018	ROHIT KARAN SHASHIKANT	
19	200490119019	PANCHAL HARSHKUMAR CHETANKUMAR	
20	200490119020	CHAUDHARI NILKUMAR JITENDRABHAI	
21	200490119021	PATEL NEELKUMAR NATVARBHAI	
22	200490119022	GANVIT MAYANKBHAI RAJESHBHAI	
23	200490119023	VASAVA JAIMINKUMAR NARENDRABHAI	
24	200490119024	RATHAVA DHAVAL RAMANBHAI	
25	200490119025	GAMIT NIRMALBHAI PRAVINBHAI	
26	200490119026	VASAVA MEHULKUMAR SURESHBHAI	
27	200490119027	PATIL CHETAN LAKHICHAND	
28	200490119028	KHALASI UTSAVBHAI SANJAYBHAI	
29	200490119029	PAWAR NILAYBHAI GANESHBHAI	
30	200490119030	PATEL DISHANG DILIPBHAI	
31	200490119031	PATEL JAINIL GORDHANBHAI	
32	200490119032	GAYAKWAD ROHITBHAI RAJUBHAI	
33	200490119034	RAJPUROHIT KRISHNA DEEPSINGH	
34	200490119036	PATEL ROHITBHAI ALPESHBHAI	
35	200490119038	BARAT KALPESHBHAI KAKADBHAI	
36	200490119039	PRAJAPATI UDIT JIGNESHBHAI	
37	200490119040	PATEL SHIVKUMAR PRAKASHCHANDRA	
38	200490119041	GOHIL PIYUSHKUMAR MAHENDRASINH	
39	200490119042	Yadav sujit umeshprasad	
40	210490119501	GANDHI SAHIL SIRAJUDDIN	
41	210490119502	GAMIT SHRADDHABEN RAVINDRABHAI	
42	210490119503	DESAI KHUSH NAIMESHKUMAR	
43	210490119504	GOSWAMI SHIVAM SURESHBHAI	
44	210490119505	VISHASH SHUKLA	
45	210490119506	MEHTA VISHAL VINAYKUMAR	
46	210490119507	Rathod Vivekkumar Prabhulal	
47	210490119508	PATEL HENIL MUKESHBHAI	
48	210490119509	SHARMA YASH GANGARAMBHAI	



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SR NO	ENROLL NO.	NAME	SIGN
49	210490119510	LAD NIRALKUMAR HARESHBHAI	
50	210490119511	PATEL MAYANKKUMAR NAGARBHAI	Jed M.H
51	210490119512	PANCHOLI AYUSHKUMAR SHAILESHBHAI	<del>Handwritten signature</del>
52	210490119513	PATEL KRUNALKUMAR NILESHBHAI	
53	210490119514	PRAJAPATI FENIL DILIPBHAI	<del>Handwritten signature</del>
54	210490119515	Gamit Jaineshkumar Rakeshbhai	
55	210490119516	VALVI ANKUBHAI AMRATBHAI	
56	210490119517	RAM VINAY BACHCHARAM	Handwritten signature - A - A
57	210490119518	NIKAM KRISHNA DAMODAR	
58	210490119519	Dumasia Jay Deepakkumar	<del>Handwritten signature</del>
59	210490119520	MUKULBHAI BHUSARE	Mukul Bhusare
60	210490119521	PRANIL ANIL SONAWANE	
61	210490119522	THAKOR PRUTHVIRAJ BHUPENDRABHAI	Pruthviraj
62	210490119523	BIND AADITYA SURESHKUMAR	
63	210490119524	CHAUDHARI PIYUSHKUMAR DINESHBHAI	
64	210490119525	CHAUDHARI SHYAMKUMAR RASIYABHAI	
65	210490119526	GARASIYA HIRENKUMAR KAMLESHBHAI	
66	210490119527	PATIL NILESH AMRUTLAL	Nilesh
67	210490119528	PATEL ABHAYKUMAR SUNILBHAI	
68	210490119529	GAMIT JATINBHAI ARVINDBHAI	Gamit
69	210490119530	PATIL VIPUL BHARAT	Patil
70	210490119531	PARMAR DHARUVKUMAR JASHVANTBHAI	
71	210490119532	CHAUDHARI VISHALBHAI NILESHBHAI	
72	210490119533	PATIL DEVIDAS GULABRAO	Devidas
73	210490119534	SALVE SNEHA RANDHIRBHAI	Sneha
74	210490119537	PATEL KUMPALKUMAR SURESHBHAI	K.S. Patel
75	210490119538	PATEL MAYANKBHAI JITENDRABHAI	M.J. Patel
76	210490119539	RATHOD ASHISHBHAI RAMESHBHAI	Ashish
77	210490119540	PARMAR HARSHKUMAR SHANKARBHAI	
78	210490119541	PATEL NILAYKUMAR PRAFULBHAI	
79	210490119542	ANSARI AZHARALI SHAUKATALI	
80	210490119543	SURTI PRUTHVIKUMAR NATVARBHAI	P.N.S.
81	210490119544	Yelave kalpesh vasant	Kalpesh
82	210490119545	CHAUDHARI VIVEKKUMAR NAVINBHAI	
83	210490119546	Bhavsar Mitanshu Narendrabhai	Mitanshu
84	210490119547	CHAUDHARI TUSHARKUMAR AJITBHAI	
85	210490119548	PATIL SAURAV NIMBA	
86	210490119550	VASAVA VISHALKUMAR VIJAYBHAI	
87	210490119551	KOLA MUHAMED UMER RIYAZ	
88	210490119552	CHAUDHARI PRASHANTKUMAR VALMIKIBHAI	
89	210490119556	PANDEY SHASHANKSHEKHAR PAVANKUMAR	



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**ANNEXURE II VISIT SCHEDULE**

<i>SCHEDULE OF VISIT</i>		
<b>Date &amp; Time</b>	13 <sup>th</sup> October 2022 & 10:00 AM	
<b>Venue</b>	<b>From:</b> SNPIT & RC, Umrakh, Bardoli	<b>To:</b> Jay Metal Tech, Block No. A/15, Plot No. 6 / 7 / 8, Road No. 8, Udhyanagar, Udhna. Surat, Gujarat - 394 210, India
<b>Staff Accompanied</b>	<b><u>Prof. Hitesh Tailor</u></b> Assistant Professor	<b><u>Prof. Akash Vyas</u></b> Assistant Professor
<b>Visit Module</b>	Working Factory's Machinery	
<b>No. of Benefited Students</b>	47	





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**ANNEXURE III PHOTOGRAPHS**

**A. VISIT PHOTOS**

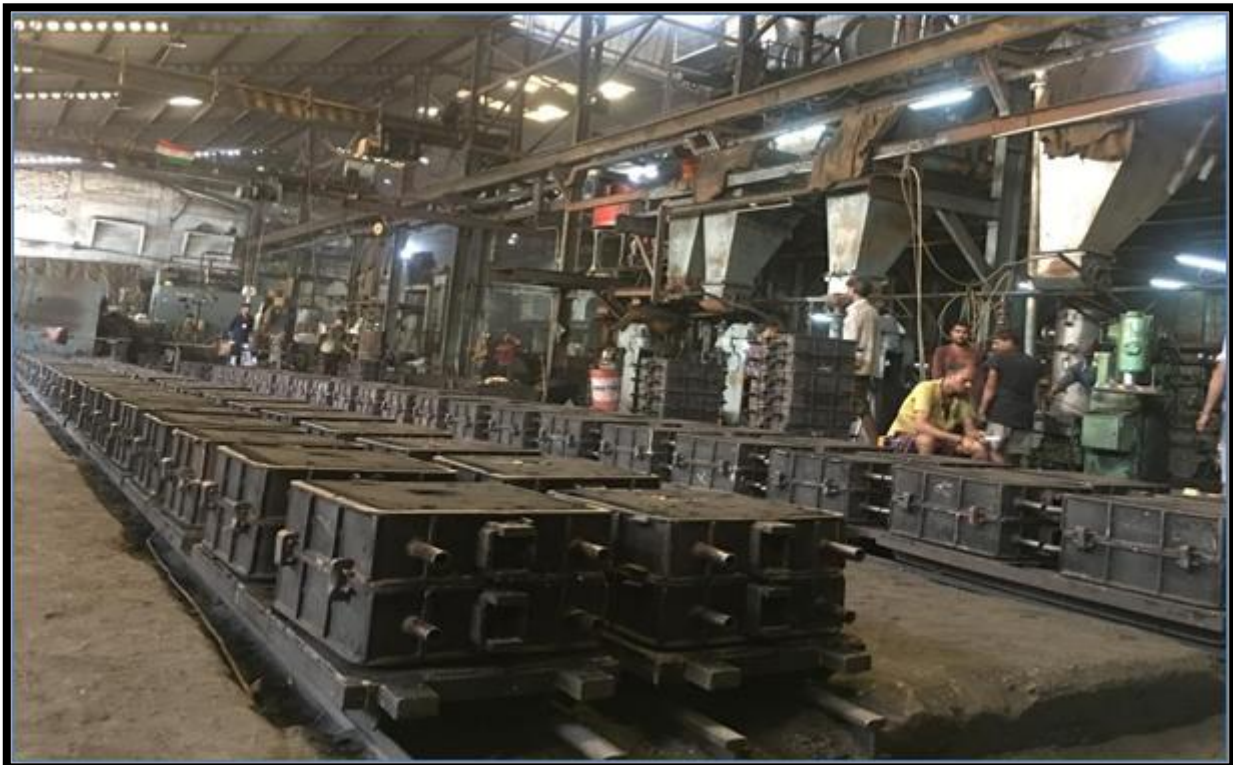




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