



Company Profile

Sigma Electric Manufacturing Corporation Private Limited,
VKIA Jaipur

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1-1 Sigma Group

1-1.1 Company Profile

Brief History

Sigma Electric is a global leader in the manufacture of ferrous and non-ferrous castings, precision machined components and sub-assemblies. Sigma has established long-term partnerships with its global customers, working closely to help them meet the challenges of a highly competitive business environment.



Sigma Electric is a 100 % Export Oriented Organization. Set up 30 years ago. HQ at Garner, NC, US. There are over 5000 team members worldwide. Sigma has a majority shareholding from Argand Partners, USA.

Product Range

Sigma supplies to global leaders in market segments such as electrical, lighting, industrial, power tools, process instrumentation, appliances, telecom, aerospace, defence, marine, power, agricultural, food and Medical, Military, LED lightings.

Locations

Twelve world class manufacturing facilities at Pune, Jaipur, Mexico, USA for aluminum, zinc, bronze, copper, wide range alloys, iron & steel products.

Plants

Manufacturing capacity is 50,000 MT/annum with world-class manufacturing equipment tool room and design /engineering capabilities. Plants operate on Lean manufacturing system, certified for ISO 9001, ISO 14001, ISO 45001 certifications.

Global Supply Chain

Warehouse, sales, customer service teams are at Garner, NC, USA.

1-1.2 Outline of the Group

Company Overview



US Headquarters & Warehouse facility

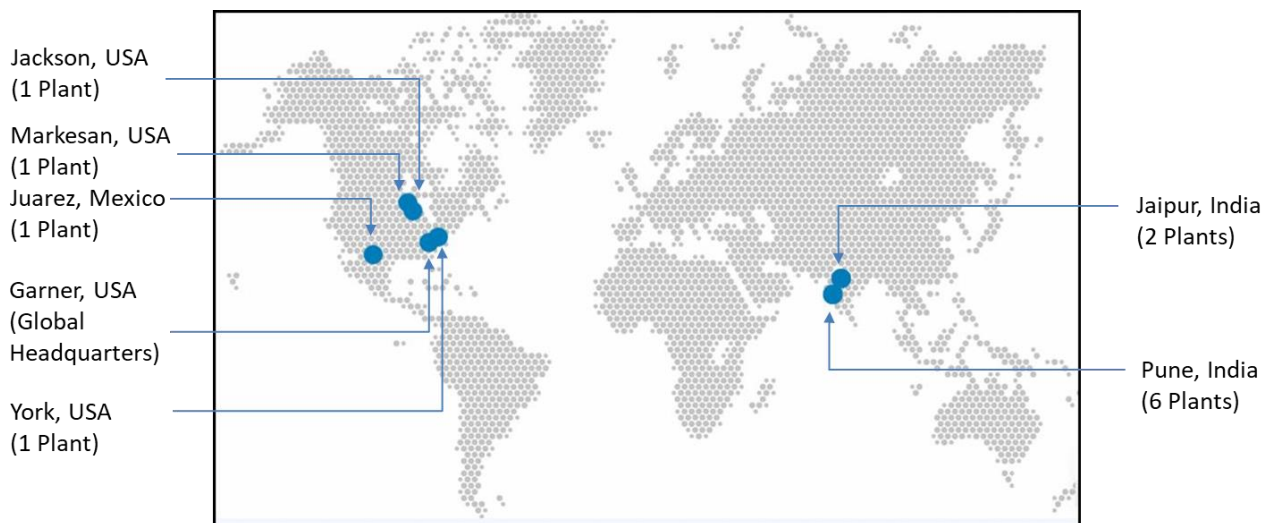
Sigma Electric is a global leader in the manufacture of machined cast metal parts and assemblies for the electrical, utility, home appliances, telecom, industrial and instrumentation markets.

 Aluminum Bronze Gravity Casting Plant, Pune, India	 Zinc Die Casting Plant, Pune, India	 Aluminum Die Casting & Steel Plant, Pune, India	 Aluminum Die Casting Plant, Pune, India	 Ferrous & Non Ferrous Plant-VKIA Jaipur - India
 Sigma Mexico Juarez, Mexico	 Sigma Avalon USA (Ohio, Wisconsin, Markesan)	 Sigma Tooling Dynamics USA (PA)	 New Ferrous Plant-SEZ Jaipur - India	

Plants Compliant to ISO 9001, 14001 & 45001 Standards
Production Capacity = 7752 MT / Annum

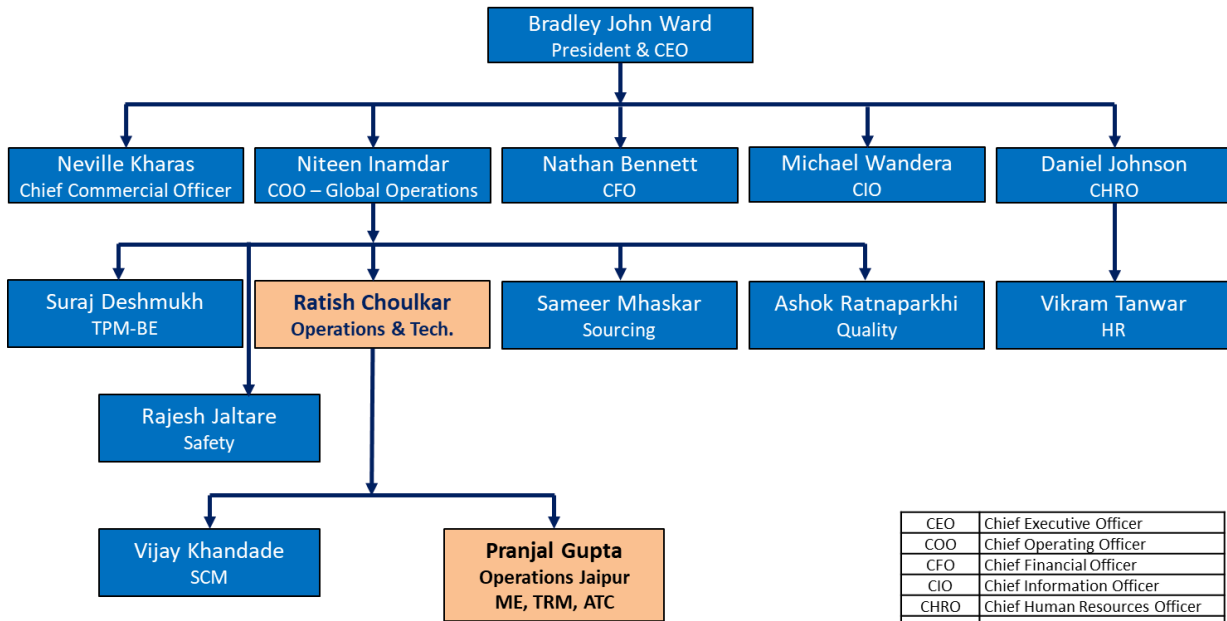
1-1.3 Global Footprint

Sigma group is having total 12 manufacturing facilities throughout the world. Out of which 6 manufacturing plants are located in Pune, 2 plants in Jaipur and 4 plants are in US and Mexico.



1-1.4 Organization Chart – Group Level

Organization chart at group level is shown below



Legend, Assessment Plant

CEO	Chief Executive Officer
COO	Chief Operating Officer
CFO	Chief Financial Officer
CIO	Chief Information Officer
CHRO	Chief Human Resources Officer
TPM-BE	Total Productive Maintenance – Business Excellence
HR	Human Resource
SCM	Supply Chain Management
ME	Manufacturing Engineering
TRM	Tool Room
ATC	Advance Technical Center

1-1.5 Sigma Core Values

OUR VISION

To be the global partner of choice by exceeding customer expectations

OUR MISSION

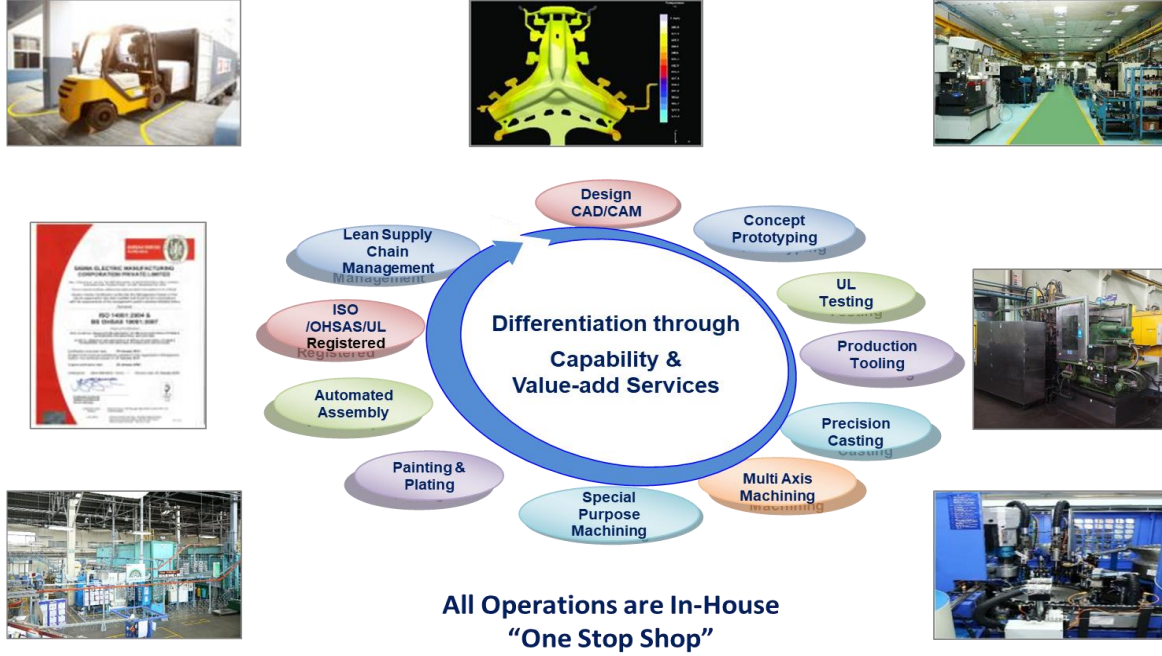
To create value for our customers as a trusted partner by delivering world class product solutions

AT SIGMA WE VALUE PEOPLE WHO

- have exemplary **honesty** and **integrity**
- are **customer focused**
- strive for **continuous improvement** in all they do
- are **courageous** and **trustworthy**
- are committed to **teamwork**
- are **socially** and **environmentally responsible**
- act proactively** in the best interest of all stakeholders

1-1.6 Manufacturing and Engineering Capabilities

Manufacturing and engineering capabilities are shown below



1-1.7 Global Partners

These are our key customers.



Added 5000+ New products with 20+ New Customers over last 4 years

1-2. Sigma Jaipur

1-2.1 Outline of the Unit



Plant	Sand Casting for Ferrous & Non-Ferrous
Product Range	Electrical, Lighting, Hydraulics and Household Appliances
Plant Area	26749 Sq. Ft.
Installed Capacity (2023)	7752 MT / Annum
Alloys	SG, Gray, white Iron, Copper alloy, Aluminum, Zinc.
Total Employees	1027 nos.
Equipment's	03 Sinto Moulding Machine, 05 Jolt squeeze Machine, 10 Induction furnaces, 9 Robotics loading, unloading arm, In-house Spectro, Precision Machining – CNC and VMC, SPMs, Zinc Plating & Powder Coating plants

1-2.2 Business Model

Inventory build-up in US warehouse based on customer demand



MTS (Make To Stock) – Jaipur	→	US Warehouse (Garner)	→	Stock and dispatch to customer (85% Contribution)
MTO (Make To Order) – Jaipur	→	US Warehouse (Garner)	→	Customer (15% Contribution)

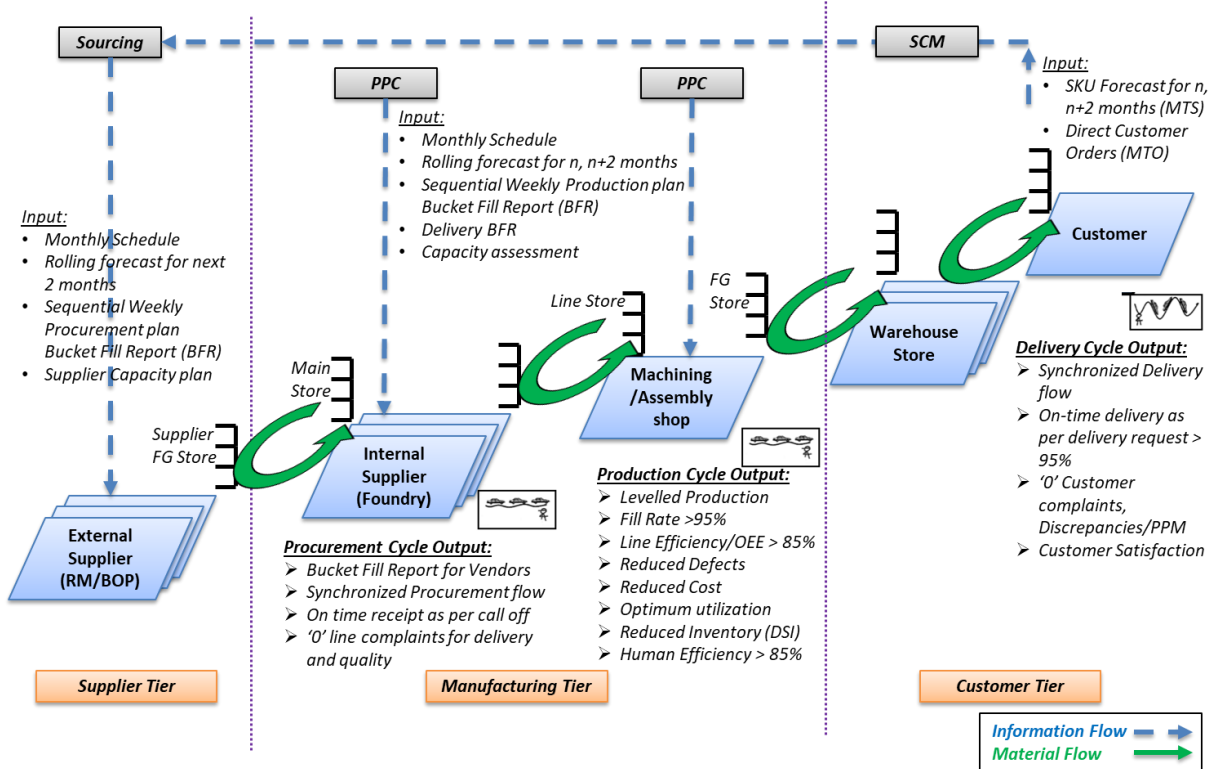
Supply Chain Model

Sigma is supplying more than 95% of parts to US customers. Material is stored in our own warehouse (Garner, US) and based on the customer orders material is dispatched from our warehouse. Sigma Jaipur manufactures and supplies the material as per customer requirement to the Garner warehouse. In some cases, Sigma Jaipur is directly supplying to the end customers.

Scope of Supply Chain

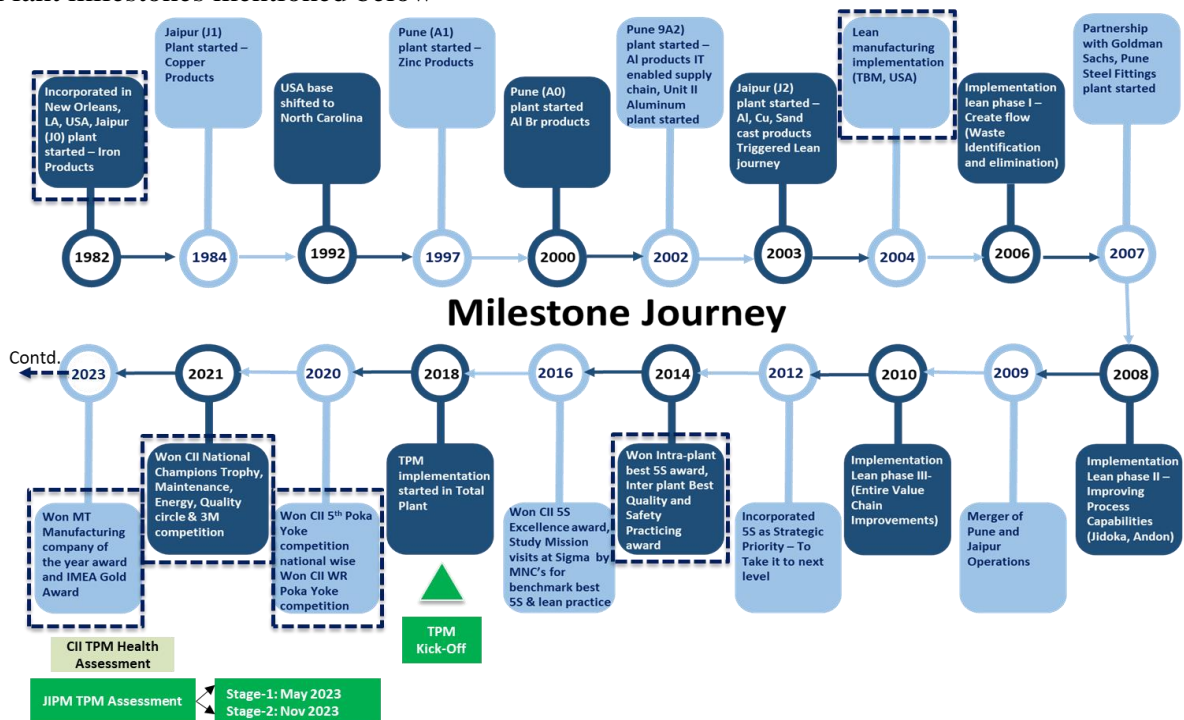
The scope of supply chain is to receive the order from the customers, wherever required generate forecast, load the plants with monthly/weekly plans and ensure material availability at Customer's place / Sigma warehouse in a timely manner.

Material procurement and input supply chain is taken care by Purchase function.



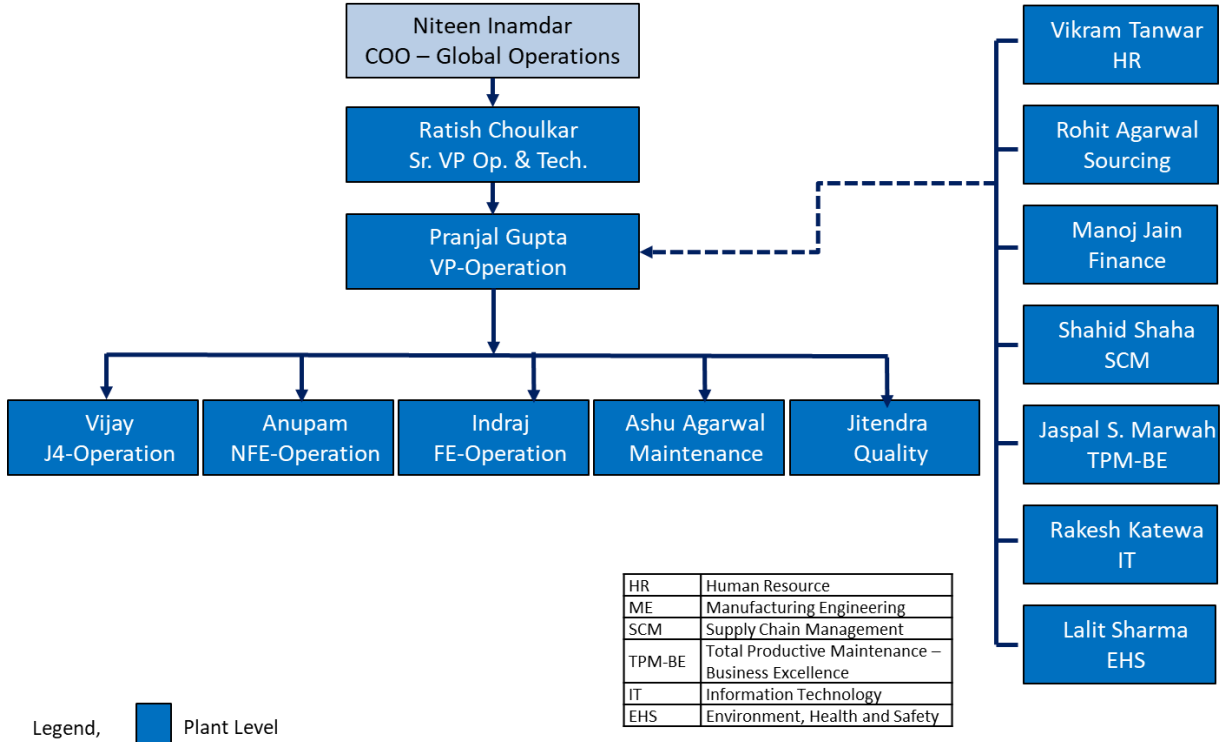
1-2.3 Plant Milestones

Plant milestones mentioned below



1-2.4 Organization Chart – Plant Level

Organization chart is shown below



1-2.5 Product Portfolio

Sand Cast Ferrous and Non-Ferrous Products for: Electrical, Lighting, Power & transmission system, Hydraulic and Household Appliances



1-2.6 Key Customers

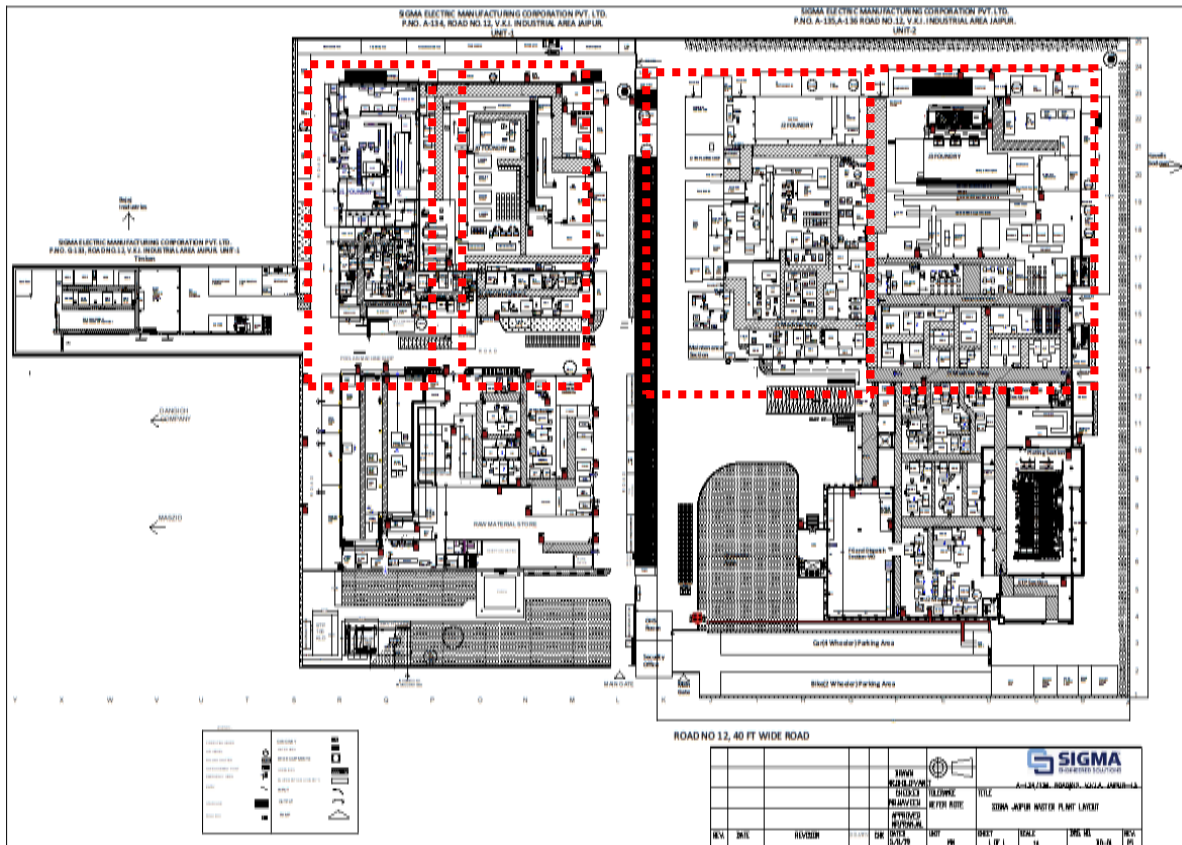
These are our key customers with sale contribution.



Customers	Sale Contribution %
EATON	30%
HUBBELL POWER	8%
BRIDGEPORT	7%
PENN UNION	7%
BLACKMER-DOVER	6%
ERMCO	5%
ABB	4%
WHIRLPOOL CORPORA	4%
HOWARD	4%
ELECTRIC MOTION	3%
HUBBELL	3%
OTHER - PL	3%
OTHER	3%
SOUTHWIRE	2%
TIMKEN	2%
VICTAULIC	2%
RETAIL	2%
SEPCO	1%
S&C	1%
L.H. DOTTIE	1%

1-2.7 Unit Layout

Total Plant Area is 26,749 Sq. meter



1-2.8 Staffing Structure

Category wise manpower distribution as follows for Sep'23

Category	UOM	Employee Count
Staff	Nos.	169
Associates	Nos.	91
Asst Engineer - Line	Nos.	124
Technician	Nos	10
Trainees	Nos	231
Contract Operator	Nos	434
Total No. of Employees	Nos	1059

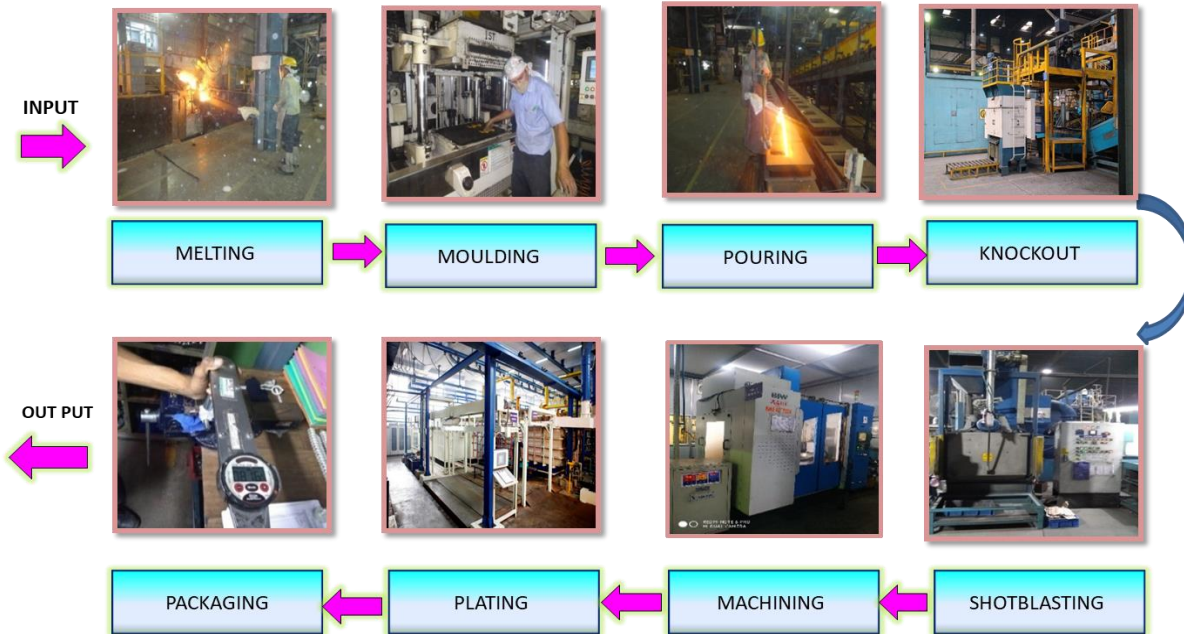
1-2.9 Major Equipment

Following is equipment classification for FY19

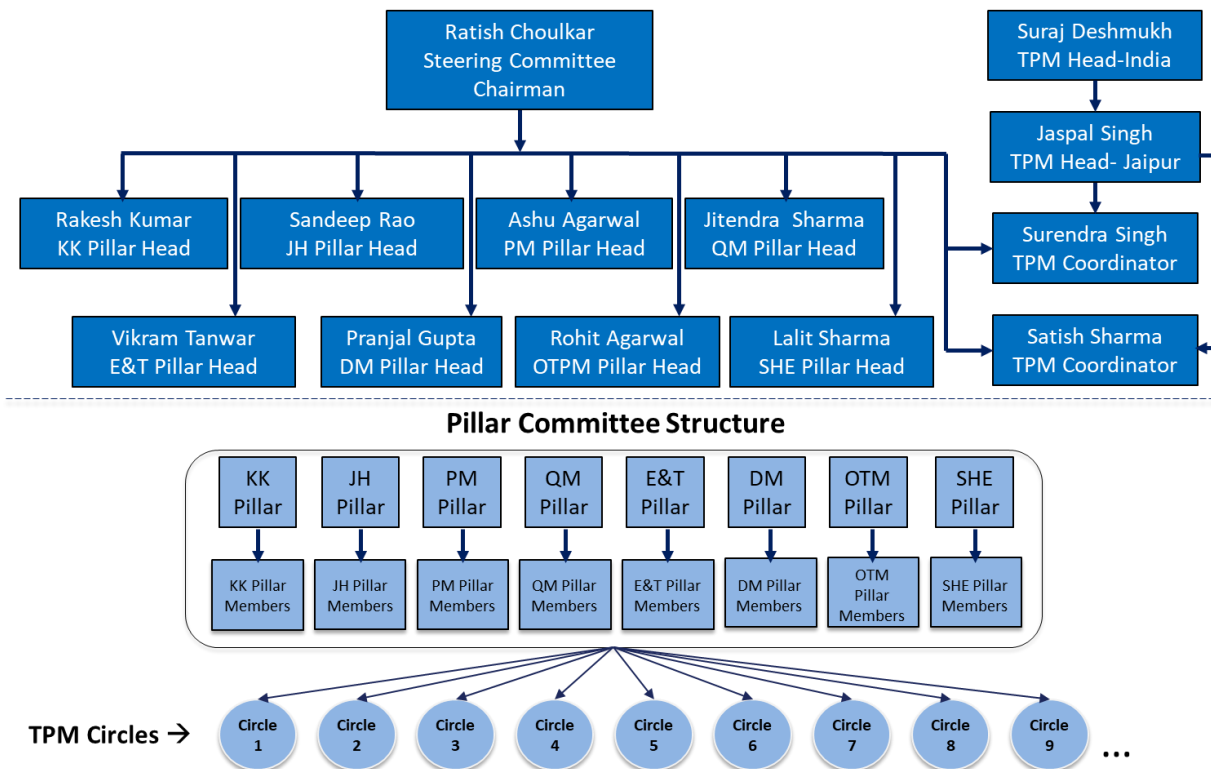
#	Area	Equipment Quantity	Equipment Classification			
			S	A	B	C
1	Foundry	104	4	28	48	24
2	Machine Shop	268	4	26	173	65
3	Plating	8	0	0	6	2
4	Assembly	22	0	0	17	5
5	Tool Room	26	0	7	9	10
6	Utility	24	0	0	4	20
	Total Equipment	452	8	61	257	126

1-2.10 Manufacturing Process Flow

Following is plant process flow



1-2.11 TPM Organization Structure



1-2.12. Milestone on the Journey of Manufacturing Excellence

1 Need of TPM

To improve business performance and overcome challenges below, management decided to implement TPM as business tool

Key Challenges

- High Customer complaints
- High In-house rejection
- Segregation cost at Garner, US warehouse
- High COPQ
- Safety - number of injuries
- Less OEE
- Low Delivery compliance
- Scope for improvement in the culture – Low employee engagement

2 Embracing TPM for Manufacturing Excellence

Our company Vision is to ‘Transform SIGMA as the Centre of Excellence through unleashing the passion and ingenuity in our people, building capabilities, using innovative technology and business processes, and consistently delivering value exceeding stakeholder expectations; thereby be the most preferred destination for investment’.

In line with our vision, we have felt the strong need of TPM as it will help us to achieve zero BAD. Develop employee capability, this will result in increased productivity, improved customer satisfaction and make profitable organization’.

The below details represent the reason we embraced TPM to achieve operational excellence.

3 TPM Policy

To implement TPM, management established TPM policy



TPM Policy

We, at Sigma Electric Manufacturing Corporation Private Limited, aim to be the most preferred global supplier of machined casting components to our customers globally. We will achieve this by designing, manufacturing and supplying innovative products of highest quality standards by implementing Operational Excellence "**Total Productive Maintenance**" (TPM) in our supply chain and adopting 0/100 philosophy.

We are committed for the highest level of Operational Excellence and thereby customer delight by targeting at,

- **Zero Accident**
- **Zero Breakdown**
- **Zero Customer Complaint**
- **Zero Defects**

This will be achieved by-

- Creating a culture through strong commitment at all levels
- Enhance capabilities of employee at all levels across organization
- Total employee involvement
- Achieving Product, People and Process excellence
- Integrating other improvement initiatives like ISO, Lean, 6 Sigma and others initiative into the TPM

Sigma adopts TPM as a main prime driver to achieve Operational Excellence.



Rev: 03
Date: 1st July 2023

Niteen Inamdar
EVP & COO
(Global Operations - SIGMA Castings)

1-2.13. Results and Benefits Achieved

1. Key Performance Indices – Results

Category	Index	Unit	BM (TPM Started) FY'19	Actual Status YTD FY 24	Target FY24
S	Number of work-related accidents requiring days off work	Cases/ year	1	0	0
S	Number of work-related accidents not requiring days off work	Cases/ year	38	1	0
P	Productivity for main products	Kgs/Man/Month	451	611	609
P	OEE (or Overall Plant Efficiency)	%	66	84.6	85.5
P	Availability	%	84	91.1	93
P	Performance Rate	%	81	95.6	95
P	Quality Products Rate	%	96.2	97.16	97
P	Number of breakdowns	Breakdowns/ Month	563	91	80
P	MTBF	Hours	81	470	475
P	MTTR	Minutes	86	64	62
Q	Number of customer complaints	Number/year	333	0	0
Q	In-line defect rate (scrap)	%	3.85	2.84	2.59
Q	In-line defect rate (rework)	%	20.20	3.95	4.00
C	Cost index	Cost/Kilogram (Conversion Cost)	1.06	0.92	0.93
D	Production Lead time	Days	3.41	2.23	2.03
D	Delivery performance	%	89	97	100
S	Frequency rate	Number of occupational accidents with leave for 1 000 000 worked hours	0.32	0.93	0.00
M	Number of Employee Suggestions implemented	Number/ Person/ Year	0.92	2.82	2.8

2. Intangible Benefits

Understanding TPM in the right spirit & practicing it day-to-day over five years has brought significant changes in work culture, system orientation, analytical approach & flexibility.

Work Culture:

- ✓ Sense of ownership of equipment / process i.e. “I Operate, I maintain, I control.”
- ✓ People started focusing on theme base kaizen & participated more in external as well as internal competition.
- ✓ People started believing the possibility of Zero Customer Complaint, Zero breakdown and Accident.
- ✓ People have started thinking deeply in their areas / section to improve from existing condition to next level.
- ✓ People now work as per the Flexibility of requirement and does not resist to any changes.
- ✓ Sustenance of Improvements done by the operators.

System Orientation:

- ✓ TPM is integrated with IMS.
- ✓ Management objectives are well linked to plant objective, department Objective and then to Cell Objectives so focusing cell working in more meaning full and system way.
- ✓ Neat and Clean working environment can be seen.
- ✓ Well defined system for maintenance spare management, Quality monitoring and Production monitoring.

Analytical Approach:

- ✓ Continuous Improvement / Focus on prevention of losses by searching the abnormalities, root cause analysis and Kaizen Implementation.

Flexibility:

- ✓ Flexibility in manufacturing due to multi-skilled operator
- ✓ Production Output as per the Customer Pull

1-2.14. Recognitions in External Competitions

Sigma teams participated at various national level competitions and bagged awards as

#	Year	Award	Category
1	FY24	Manufacturing Today Award 2023	3 Awards: Excellence in Engineering Design, Quality, Health & Safety
2	FY24	QCFI 13th CCQC Delhi Chapter	3 Awards: All 3 Gold Award (First Prize)
3	FY24	CII 46th National level Competition	1. Gold Award 2. Silver Award
4	FY23	IMEA award Frost & Sevillian	Gold Award
5	FY23	CII 16th National level Competition	Platinum Award
6	FY22	CII 16th National level Competition	Silver Award
7	FY22	QCFI Competition 2022	Bronze Award
8	FY22	CII 15th Quality Circle 2022	Gold Award
9	FY21	CII 39 th National kaizen Competition 2021	(Winner - First Prize Trophy)
10	FY21	CII 5 th Energy circle Competition 2021	Gold Award








1-2.15. Way Ahead

#	Particulars	Target Date
1	Challenging JIPM excellence award for Unit II Jaipur	FY26
2	Challenging JIPM consistent TPM commitment award for Unit-I	FY26
3	Initiate TPM practices in North America Plant	FY24 (Initiated)
4	Sustainability Award	FY26