



Alloy Steel, Stainless Steel, Duplex Steel & Nickel Base

# Quality Sand Castings

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[www.metflowcast.com](http://www.metflowcast.com)



Our core domain is to manufacture Machined Steel Castings with precision and unmatched quality. Metflow holds a strong intent of excelling in the steel casting industry through continuous upgradation of technology and human resource.

# Casting Relationships. Distributing Quality.

The company was established in 2006 in the western region of India. The company is operated by professional and experienced team with experience of more than 30 years. We pour a wide range of Steel alloys and cater to a variety of industries. In 15 years of business history, we have successfully developed more than 2000 products for our domestic and overseas clients.



Vision: Evolve into a leading steel sand castings manufacturer catering to diverse industrial applications while fostering healthy and sustainable business relations.



Mission: Ensuring consistent quality and timely supply for total customer satisfaction.

## Metflow is more than just Steel Sand Castings.

Metflow Cast is a part of a well diversified group engaged in business verticals like Engineering, Infrastructure, Polymer and trading of industrial commodities.



Austin Alloy is a modern & well-established Investment casting foundry. Company is manufacturer and Exporter of Alloy Steel, Stainless Steel, Duplex Steel and Nickel Base Investment Castings from few grams to 100 Kg weight.



Incorporated in 2002, Galaxy Technoforge manufactures a wide range of Hot forged profile rings/bearing races/gear blanks for automotive and non-automotive segments.

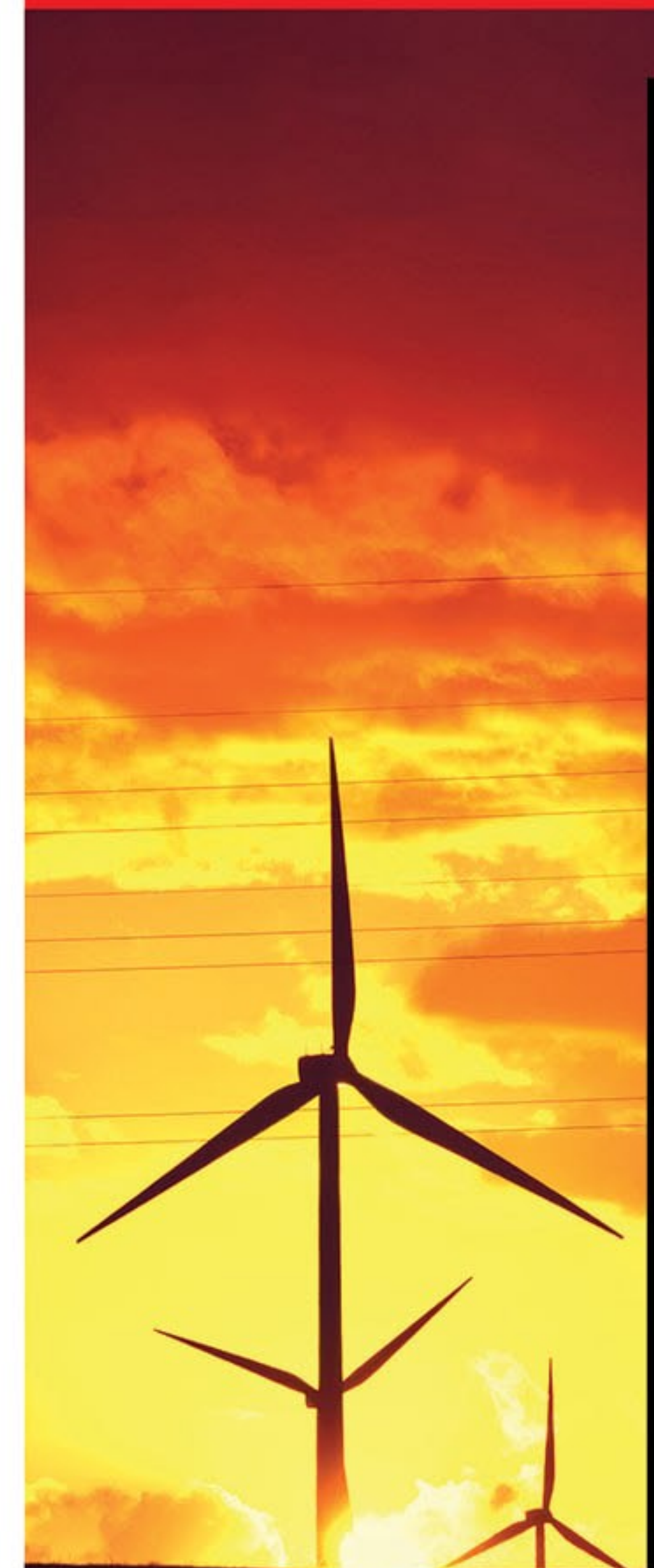


Ayushi Engineering established in 2003 is a manufacturer of complex metal components for the automotive and general engineering industry. Ayushi supports our metal processing (Casting and Forging) companies with world-class machining capabilities.



Emporia Enterprise is our group sales office based in Singapore. Emporia overlooks import and export activities of our group.

We believe in the sustainable growth strategy. For our state of the art foundry we use green energy produced by two windmills with a capacity of 1.4MW.



# We at Metflow, strive for superlatives, And we thrive too

## The Leadership Synergy

Team Metflow has diverse techno-commercial experience. We have a team of engineers for the development as well as quality assurance roles. We believe our employees as our greatest asset. We are privileged to be able to call 250 employees as our extended family.

## The Machine Capabilities

We at Metflow believe in continuous capital investments in latest machinery to serve our esteemed clients with no compromise on quality. We have believed in developing in-house solutions for value added processes like machining and radiography (NDT) to ensure timely delivery of our castings.

At MCPL, we have implemented several international quality standards. We believe quality standards make our sand casting process more efficient and elevate our facility to meet the global standards. Our facility has been certified by the following international approvals.



ISO 9001:2015



PED 2014/68/EU



AD 2000  
Merkblatt WO



Norsok M-630 Ed. 6



IBR - 1950



Marine Approval

## A snapshot of our manufacturing capabilities

Installed capacity  
**1500 MT per year**

weight of single piece  
casting  
**50 Kg to 750 Kg**

Single piece size  
**300 X 300 mm to  
1500 X 1500 mm**

Minimum Core Dia  
**25 mm**  
Minimum Wall  
Thickness **10 mm**

## What Sets Us Apart?

### One stop solution for all your metal components requirements

Associate facilities to manufacture complex Steel castings, machining, Coating, Painting & Assembly.

### Technically Sound & Professional Management Team

We have a team with global experience for quick and effective communication with our prestigious customers.

### Quick Sample Development Process

We have dedicated employees to support customers willing to switch over to Metflow or have any new project requirements.

### Commitment to consistent quality and timely delivery

We supply castings to critical applications where late delivery & quality issues are worth millions of dollars. We count our customers reputation as our own reputation.





### Melting

- Induction furnace
- Crucible Capacity: 1) 400 Kg, 2) 900 Kg & 3) 1200 Kg
- Type of ladles: Bottom pouring, Sank pouring, T spout pouring
- Temp controlling by Immersion Type Pyrometer & non-contact Infrared Thermometer.
- Batch analysis of each heat to achieve desired Aim Chemistry.



### Moulding Unit

- Moulding process: CO<sub>2</sub> & Nobake
- Semi Machine Loop Line: Match Plate Size 660 X 760mm to Accommodate Single Piece up to 100Kg & Multiple cavity for low weight.
- Hand Moulding: Match Plate Size Up to 1500mm to Accommodate Casting Up to 1200mm Dia & Weight Up to 750 Kg.
- Mould and Core Dryer
- Mould Hardness Testing



### Fettling

- Knock out Machine
- Arc Air Gouging Machine
- Swing Frame Grinding, Fiber Cutting & Pneumatic Grinding
- Shot Blasting
- Pickling and Passivation for Stainless Steel
- Individual Grinding Machines for Carbon Steel and Stainless Steel



### Pattern Shop

- Teak wood and Aluminum Pattern
- All patterns are mounted on match plate with method identification
- Storage in Racks



### Welding

- Electronic Welding Machine
- WPS and PQR done in different alloys
- Qualified Welders
- SMAW & TIG welding



### Heat Treatment

- Furnaces: 3 nos
- Fuel: Gas and Electric
- Process: Normalizing, Water Quenching, Solution Annealing & Tempering
- Operating Temp: up to 1200° C
- Calibration: API 6D annex M.
- Batch Capacity: 1 MT to 3 MT
- Mechanical Agitation
- 50000 liters Quenching Tank
- Quenching in 40 seconds max



# Materials

	ASTM	DIN
Carbon Steel	A216 - WCB	1.0619
	A216 - WCC	1.0625
	A352 - LCC	1.6220
	A352 - LCB	1.1131
	A27 - 70-36	
	A148 - 80-50	
	A148 - 90-60	
	A148 - 105-85	
	A148 - 150-135	1.0455
		1.0446
		1.1165
		1.1118
		1.6570

	ASTM	DIN
Low Alloys Steel	A217 - WC1	1.5419
	A217 - WC4	1.6759
	A217 - WC5	
	A217 - WC6	1.7357
	A217 - WC9	1.7379
	A217 - WC11	
	A217 - C5	1.7365
	A217 - C12	
	A217 - C12A	1.4955

	ASTM	DIN
Super Duplex Stainless Steel	A890/A995 - 1B	1.4517
	A890 - 1C	
	A890/A995 - 2A	
	A890/A995 - 3A	
	A890/A995 - 4A	
	A890/A995 - 5A	1.4470
	A890/A995 - 6A	1.4469

	ASTM	DIN
Austenitic Ferrite Duplex Steel	A351 - CF3MN	1.4435
	A351- CN3MN	
	A351 - CK3MCuN	1.4547
	SB649 - 904L	1.4539

	ASTM	DIN
Martensitic Steel	A743 - CA15	1.4107
	A743 - CA40	1.4027
	A743 CA-6NM	1.4317
	A352 LC1	1.5422
	A352 LC2	1.5636
	A352 LC2-1	1.6781
	A352 LC3	1.5638
	A352 LC4	


	ASTM	DIN
Austenitic Stainless Steel	A351 - CF8	1.4308
	A351 - CF8M	1.4408
	A351 - CF3	1.4309
	A351 - CF3M	1.4409
	A351 - CF8C	1.4552
	A351 - CF10	
	A351 - CK20	1.4843
	A351 - CH20	
	A351 - CN7M	
	A351 - CG8M	
	A351 - CG3M	
	- CF8M(Nb)	1.4581

	ASTM	DIN
Nickel Based Super Alloys	A494 - N-12MV	
	A494 - N-7M	
	A494 - CY40	
	A494 - CW12MW	2.4856
	A494 - CW6M	
	A494 - CW2M	
	A494 - CW6MC	2.4858
	A494 - CX2MW	
	A494 - CU5MCuC	2.4858

	ASTM	DIN
Heat Resisting Steel	A297 - HF	1.4825
	A297 - HH	1.4837
	A297 - HI	1.4846
	A297 - HK	1.4848
	A297 - HD	1.4823

We also supply castings other than above materials according to ASTM, DIN, BS, JIS & Customized Specifications.

# Testing Facilities




**SPECTROMETER**

Fe and Ni base Spectrometer

CRM Samples of

- Low Alloy Steel
- Martensitic Steel
- Austenitic Stainless Steel
- Duplex Steel
- Nickel Base Alloy




**IMPACT TESTING**

- Capacity: 300 J max
- Testing Temp: 20°C to -196°C



**SAND ANALYSIS**

- AFS Analysis
- Permeability Testing
- Compressive Strength
- Testing Clay Content Test




**MICROSTRUCTURE EXAMINATION**

- Ferrite Testing as per ASTM E 562 etc.
- Micro Structure Examination as per ASTM A 923 etc.
- Ferrite Testing by Ferritescope




**PMI TESTING**

- Material Testing & Identification




**MECHANICAL TESTING**

- UTM capacity of 200 KN.
- Electronic Extensometer for 0.2 % & 1.0 % pro of stress.
- Hot Tensile Test




**HARDNESS TESTING**

- Rockwell Hardness Tester
- Brinell Hardness Tester
- Portable Leeb Hardness Tester
- Poldi Hardness Tester




**CORROSION TEST**

- Corrosion test according to ASTM A262 Practice A, B, C, E & F etc.
- Pitting Corrosion Test as per ASTM G 48 Method A, E
- Crevice Corrosion as per ASTM G48 Method B



**CHEMICAL ANALYSIS**

- All type of raw material analysis by wet method



**RADIATION CHECK METER**

- Checking radioactive contamination in material

# Measuring Facilities



**2D Height Gauge**

Make : Electronica

**SPECIFICATIONS**

Measuring Range: 600 mm  
Expandable Range: 915 mm  
Squareness: 10 Micron

**Height Gauge**

Make : MITUTOYO

**SPECIFICATIONS**

Measuring Range : 600 mm  
Digital Height Gauge with Double Column



**CMM**

Make : Mitutoyo

Model : CRYSTA-Apex S7106

Size : 700(X) x 1000(Y) x 600(Z) mm.

Resolution : 0.1 Qm

**Features :**

- 1 Scanning Probe
- 2 Compatible with non-contact measuring
- 3 Reverse Engineering

**Software :**

MCOSMOS Level 3

## Dye penetrant Testing



- Method : Prod
- Type Wet
- Fluorescent Method
- Test frequency : 100 % Qty
- Procedures: EN 1371-1 and ASME Sec V Article 6 & 24 (E165)

## Magnetic Particle Testing



- Method: Solvent & Water
- washable method
- Test frequency: 100 % Qty
- Procedures: EN 1369 and ASME Sec V Article 7 & 25 (E709)

## Radiography Testing



- Source: Ir 192 & Co 60
- Separate two facility for both source
- Capacity: up to 120 mm thickness.
- Procedures: EN 12681 and ASME Sec V Article 2 & 22 (SE-1030)
- Reference Radiograph: ASTM E446 & E186

## Ultrasonic Testing



- Type: Manual
- Make: Modsonic,
- Model: Ein II Tft
- Procedures:

# In-House Non Destructive Testing

We have qualified Level II man power in all NDT streams. Our All NDE procedures are approved by EN & ASNT level III

# Machining Facilities

**Make:** LMW  
**Controller:** SIEMENS 828D

**Size:** Swing Over Dia. : 510 mm Max.  
Turning Dia. : 320 mm Max.  
Turning Length : 670 mm



## CNC LATHES

**Make:** HAAS  
**Controller:** SIEMENS 828D

**Size:** X AXIS 1050 mm,  
Y AXIS 540 mm,  
Z AXIS 600 mm,  
Forth axis rotatory table (Dia. 300 mm) (UCAM make)



## VERTICAL MILLING CENTERS

**Make:** BFW  
**Controller:** SIEMENS 828D

**Size:** Max. Swing Dia. 1100mm  
Standard Turning Dia. 800mm  
Max Turning Length 1000mm



## VERTICAL TURRET LATHES

**Make:** OKK  
**Controller:** FANUC

**Size:** X AXIS 1000 mm,  
Y AXIS 800 mm,  
Z AXIS 800 mm,



## HORIZONTAL MACHINING CENTERS

**1) Turning Dia :** 300 mm X Length 800  
**2) Turning Dia :** 500 mm X Length 800

**3) Turning Dia :** 300 mm X Length 800



## CONVENTIONAL LATHES

**Make:** LMW  
**Controller:** SIEMENS 828D

**Size:** X AXIS 1050 mm,  
Y AXIS 540 mm,  
Z AXIS 600 mm,  
Forth axis rotatory table (Dia. 300 mm) (UCAM make)



## HYDRAULIC TAPPING MACHINE

Since our inception, we have been catering to diverse industrial applications.

Our foundry is well-suited for production of valves and pumps castings as well as general engineering castings.

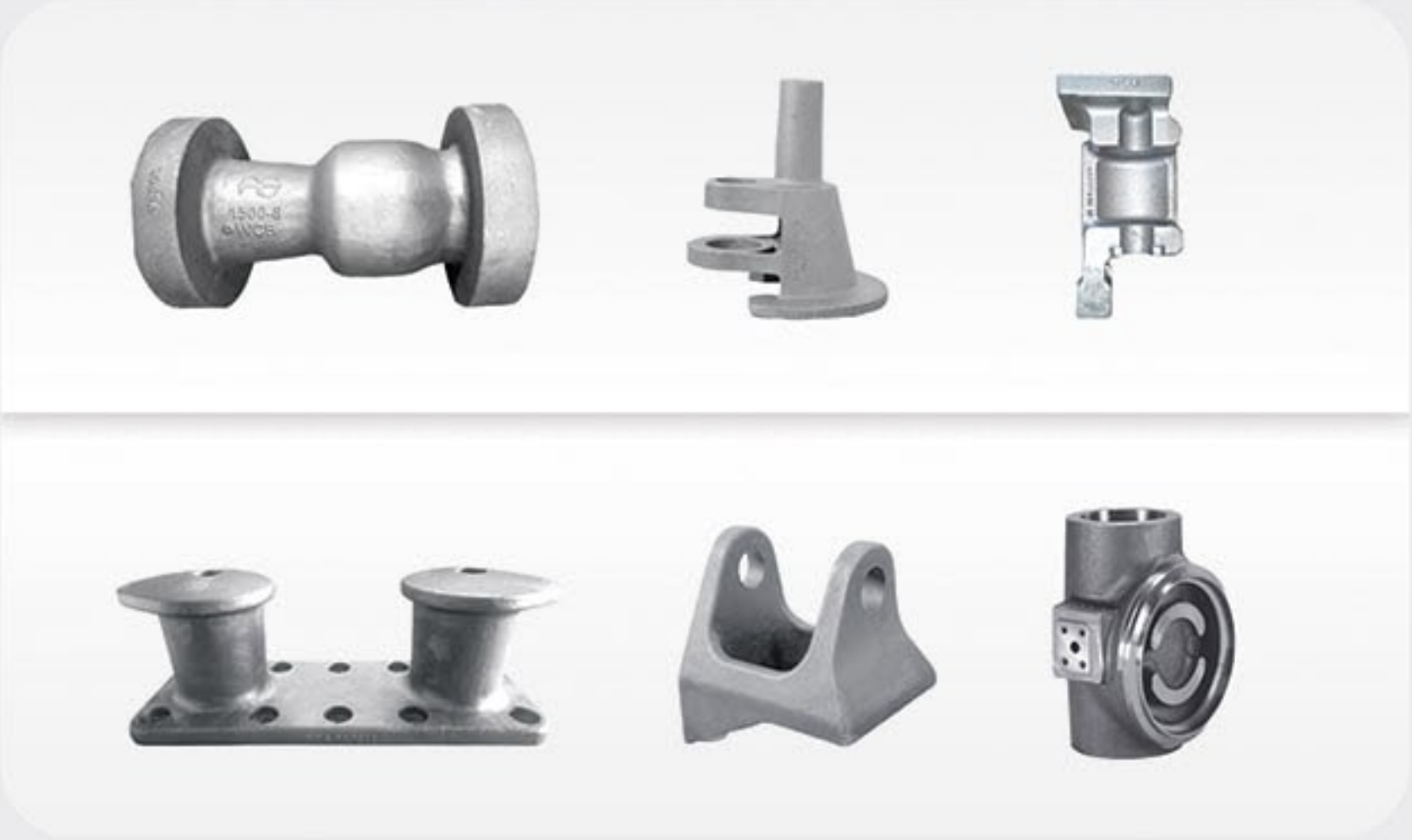
Pump Castings



Valves Castings



Engineering Castings



Machined Castings

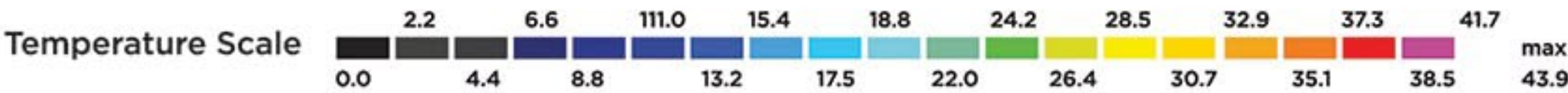
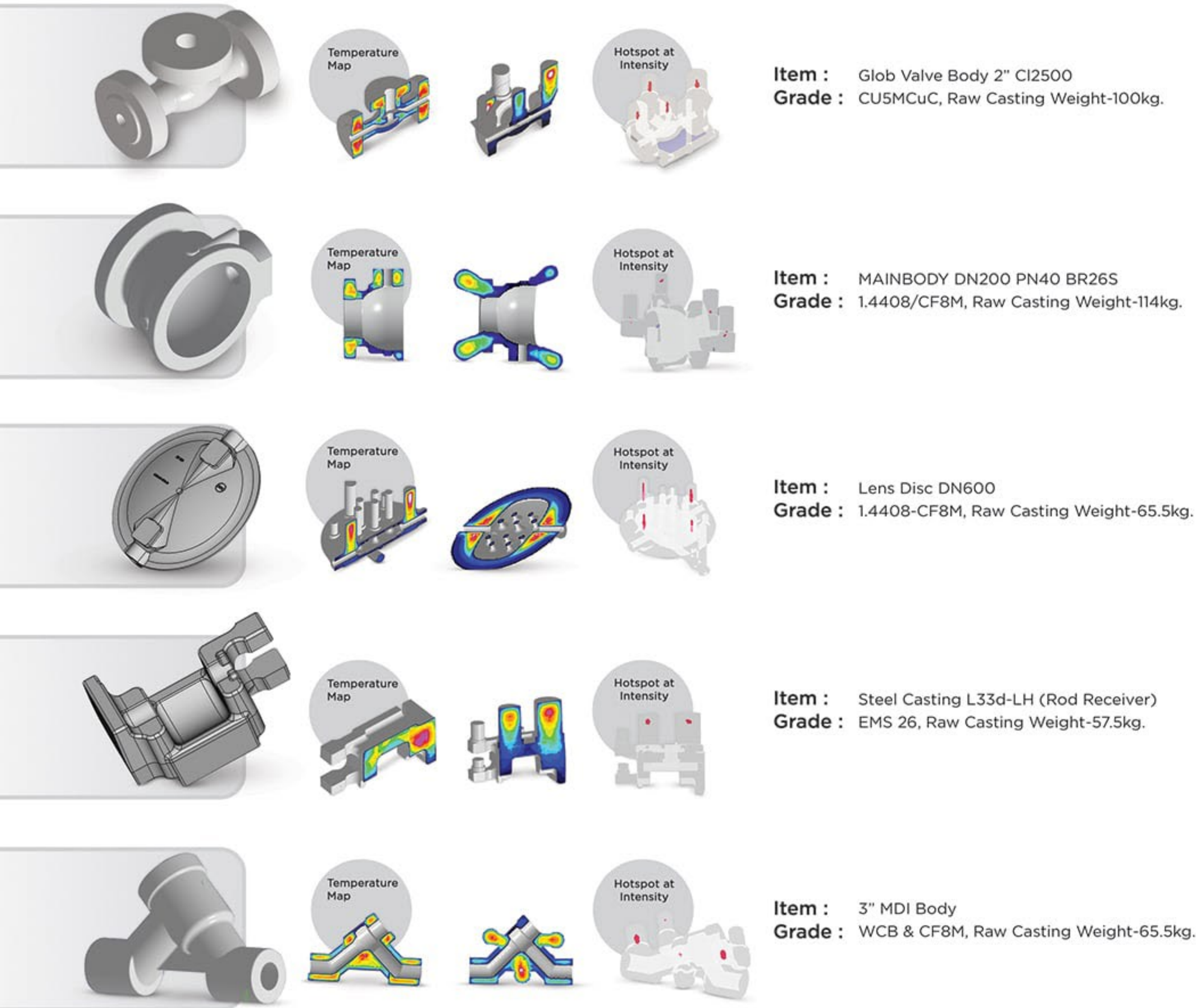


Reinventing the oldest manufacturing process by our standards to push the boundaries of product quality.



# Research & Development

Soft - CAST Simulation software allows the modelling of Thermal heat transfer including radiation with few factors, liquid flow.

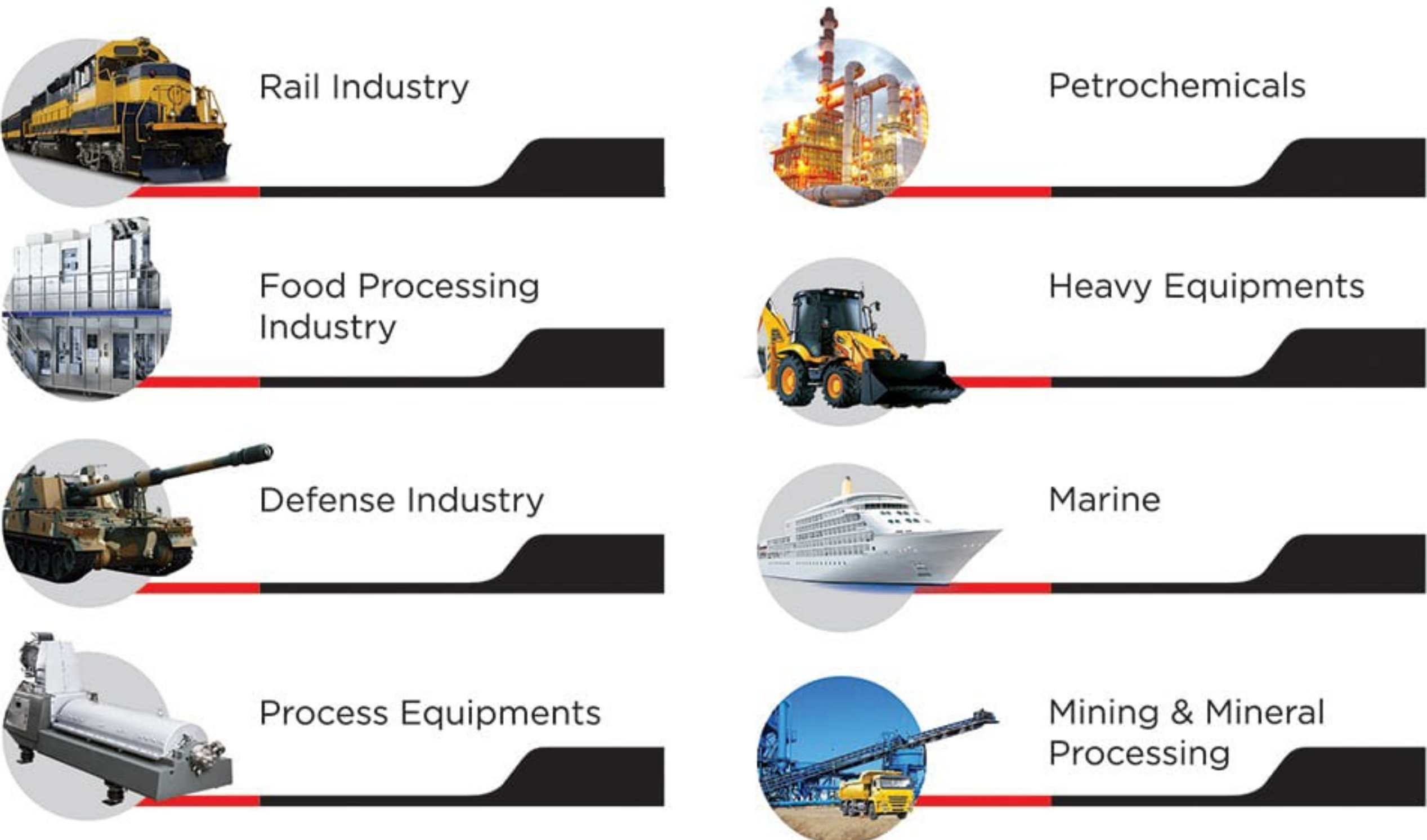


# Global Presence

Our products finding its way to more than 20 countries



# Industries Served





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